SPD® 20/20

LOGIC DIAGRAMS MANUAL

INCOTERM® CORPORATION
6 STRATHMORE ROAD
NATICK, MASS. 01760

April, 1975

CUSTOMER ENGINEERING

SPD® 20/20

STORED PROGRAM DISPLAY

LOGIC DIAGRAM MANUAL

"This document discloses subject-matter in which INCOTERM Corporation has proprietary rights. Neither receipt nor possession of this document confers or transfers any right to copy, reproduce or disclose the document, any part of such document, or any information contained therein without the express written consent of a duly authorized representative of INCOTERM CORPORATION".

SPD®

FOREWORD

This document (CS032) contains logic diagrams that are provided to support the functional descriptions and maintenance information contained in related maintenance documents such as CS031, SPD 20/20 Site Maintenance Manual. as well as the various SPD peripheral devices which are covered in the various volumes contained in the SPD 20/20 Peripherals Manual. Any comments or suggestions should be forwarded to the INCOTERM Customer Service Publications Department in Natick, Massachusetts

CONTENTS

Drawing No.	Title	Page No.
047-01-01-001	SPD 20/20 Document Tree	1
	SPD 20/20 TPU	
03020	Program Memory Schematic	2-10
047-20-02-701/703	Data Flow PC Board Assy.	11-16
047-20-01-001	Data Flow Logic Diagram	17-34
047-23-02-701	TPU Control PC Board Assy.	35-38
047-23-01-001	TPU Control Logic Diagram	39-71
047-37-02-701/704	SMCTU II PC Board Assy.	72-74
047-37-01-001	SMCTU II Logic Diagram	75-83
047-36-02-701/708	Screen Buffer II PC Board Assy.	84
047-36-01-001	SMCTU II Logic Diagram	85-95
047-26-02-701/705	Refresh Master PC Board Assy.	96-99
047-26-01-001	Refresh Master Logic Diagram	100-111
047-19-02-701/716	Refresh Slave PC Board Assy.	112-115
047-19-01-001	Refresh Slave Logic Diagram	116-133
047-22-02-701	Multiple Keyboard Controller PC Board Assy.	134-136
047-22-01-001	Multiple Keyboard Controller Logic Diagram	137-143
047-21-02-701C/701D	Tape Cassette Controller PC Board Assy.	144-148
047-21-01-001	Tape Cassette Controller Logic Diagram	149-155
047-27-02-701	Tape Cassette Preamplifier PCB Board Assy.	156
047-27-01-001	Tape Cassette Preamplifier Logic Diagram	157
047-10-61-701	Tape Drive Assy. Drawing	158
047-35-02-701	Multiple Printer Controller PC Board Assy.	159
047-35-01-001	Multiple Printer Controller Logic Diagram	160-170
047-01-01-001	TPU Power Supply Document Tree	171
047-10-56-001	Power Wiring Schematic	172
047-28-02-701	Mother Board Assy. Drawing	173-180
047-29-02-701	Daughter Board Assy. Drawing	181-186
047-13-01-001	TPU Power Supply Schematic	187-189

Drawing No.	Title	Page No.
	SPD 20/20 DISPLAY UNIT	
058-10-00-001	SPD 20/20 Display Unit Document Tree	190-191
058-10-02-001	Display Unit Power Wiring Schematic	192
058-14-02-001	Display Unit Power Wiring Schematic	193
058-15-02-701	Relay Board PC Board Assy.	194
058-15-01-001	Relay Board Schematic	195
058-17-02-701	Split Screen Power Supply PC Board Assy.	196
058-16-02-001	Split Screen Power Wiring Schematic	197
058-10-24-701/702	Keyboard Power Supply PC Board Assy.	198
058-18-02-701/703	Keyboard Power Supply PC Board Assy.	199
058-13-01-001/002	Keyboard Power Supply Schematic	200
055-10-00-001	Keyboard Document Tree	201-202
055-10-06-701	Keyboard Cable Assy. Drawing	203
055-10-18-701	Keyboard Cable Assy. Drawing	204
055-13-02-701B/703B	Extended Drive Keyboard (3270) PC Board Assy.	205-208
055-13-07-001/003	Extended Drive Keyboard (3270) Logic Diagram	209-212
	I/O CONTROLLERS	
001-04-02-701	Asynchronous Controller PC Board Assy.	213
001-04-01-001	Asynchronous Controller Interconnect Diagram	214
	Asynchronous Controller Logic	215-218
001-04-02-702	Asynchronous Controller PC Board Assy.	219
001-04-01-002	Asynchronous Controller Logic Diagram	220-223

Drawing No.	Title	Page No.
001-04-02-705	Asynchronous Controller PC Board Assy.	224
001-04-01-005	Asynchronous Controller Logic Diagram	225-229
001-04-02-706	Asynchronous Controller PC Board Assy.	230
001-04-01-006	Asynchronous Controller Logic Diagram	231-235
001-04-02-707	Asynchronous Controller PC Board Assy.	236
001-04-01-007	Asynchronous Controller Interconnect Diagram	237
	Asynchronous Controller Logic Diagram	238-244
001-08-02-702	Synchronous Controller PC Board Assy.	245
001-08-01-002	Synchronous Controller Interconnect Diagram	246
		247-250
001-08-02-704	Synchronous Controller PC Board Assy.	251
001-08-01-004	Synchronous Controller Interconnect Diagram	252
	Synchronous Controller Logic Diagram	253-259
001-18-02-701	Party Line Controller PC Board Assy.	260
001-18-01-001	Party Line Controller Interconnect Diagram	261
	Party Line Controller Logic Diagram	262-265
001-05-02-701	Cyclic Check Controller PC Board Assy.	266
001-05-01-001	Cyclic Check Controller Logic Diagram	267-269
010-38-02-710	Cyclic Check Code Converter Buffer PC Board Assy.	270
010-38-01-001	Cyclic Check Code Converter Buffer Logic Diagram	271-274
001-09-02-701/702	Boot Controller PC Board Assy.	275-276
001-09-01-001	Boot Controller Logic Diagram	277/278
001-09-01-002	Boot Controller Logic Diagram	279-281
010-30-02-701	Transmit Timer PC Board Assy.	282
010-30-01-001/002	Transmit Time Logic Diagram	283/284
010-33-02-701	Card Reader Controller PC Board Assy.	285
010-33-01-001	Card Reader Controller Logic Diagram	286/287
010-34-02-701	Dual Printer Controller PC Board Assy.	288-290
010-34-01-001	Dual Printer Controller Logic Diagram	291/292
010-35-02-701A	Unit Control Timing Interface PC Board Assy.	293-295
010-35-01-001	Unit Control Timing Interface Logic Diagram	296-299
010-40-02-701B/701C	Diskette Controller PC Board Assy.	300-303
010-40-01-001	Diskette Controller Logic Diagram	204-210
010-42-02-701A/701C	Parallel Printer Controller PC Board Assy.	311-315
010-42-01-001	Parallel Printer Controller Logic Diagram	316-318
010-48-02-701/702	Magnetic Tape Interface Controller Logic Diagram	323-328
010-51-02-701	Printing Reader/Punch Controller PC Board Assy.	329-331
010-51-01-001	Printing Reader/Punch Controller Logic Diagram	332-340
010-53-02-701	Card Reader Controller PC Board Assy.	341-346
010-53-01-001	Card Reader Controller Logic Diagram	347-349
010-56-02-701	Diskette Controller PC Board Assy.	350
010-56-01-001	Diskette Controller Logic Diagram	351-357
049-10-00-001	Low Speed Printer (Extel) Document Tree	358
049-13-02-701	Low Speed Printer Controller PC Board Assy.	359/360
049-13-01-001	Low Speed Printer Controller Logic Diagram	361/362

Drawing No.	Title	Page No.
	SPD-M MULTIPLEXER	
007-10-39-001	Multiplexer Wiring Diagram	363/364
007-01-02-701	Multiplexer Summation PC Board Assy.	365
007-01-01-001	Multiplexer Summation Board Logic Diagram	366/367
007-01-02-702	Multiplexer Summation PC Board Assy.	368
007-01-01-002	Multiplexer Summation Board Logic Diagram	369/370
007-03-02-701	Multiplexer Line Driver/Receiver Output PC Board Assy.	371
007-03-02-001	Multiplexer Line Driver/Receiver Output Logic Diagram	372
007-04-02-701	Multiplexer Line Driver/Receiver Input PC Board Assy.	373/374
007-04-01-001	Multiplexer Line Driver/Receiver Input Logic Diagram	375
007-05-02-701	Mux Summation/RTS Timer PC Board Assy.	376
007-05-01-001	Mux Summation/RTS Timer Logic Diagram	377-380
007-02-02-701/703	Multiplexer Logic Data Flow PC Board Assy.	381-383
007-06-02-701B	Multiplexer Logic Data Flow PC Board Assy.	384
007-06-01-001/003	Multiplexer Data Flow Logic Diagram	385/390
	MODEM ELIMINATOR	
027-01-02-703C	Modem Eliminator PC Board Assy.	391
027-01-01-002	Modem Eliminator Logic Diagram	392
	PAPER TAPE PROGRAM LOADER	
003-01-01-002	Paper Tape Program Loader Interconnect Diagram	393
003-01-02-702	Paper Tape Loader Board "A" PC Board Assy.	394
003-01-04-702	Paper Tape Loader Board "B" PC Board Assy.	395
003-01-01-001/002	Paper Tape Program Loader Logic Diagram	396/401

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
U	REVISED/REDRAWN 3879		

PRODUCT INDEX
010-10-00-701

TEST CONSOLE
047-14-01-701

SHIPPING CONTAINER
990-01-26-001

SHIPPING CONT. SPEC. P.S.
990-01-31-001

CONTROLLERS

BOARDING PASS PTR. CONTR
001-19-02-701

TOP ASSY. C&C CONTR.
001-05-02-701

KLEINSCHMIT CONTR.
009-17-02-701

TOP ASSY. BOOT CONTR.
001-09-02-702

UNIVAC PAGE WRITER ASYNC
001-23-02-701

PARTY LINE CONTR.
001-18-02-701

701 (10 CPS)
702 (15 CPS)
703 (15 CPS)
"U" CHART

MITE PRINTER CONTR.
001-22-02

TOP ASSY SYNC. CONTR.
001-08-02

702/703/704

TRANSMIT TIMER BOARD
010-30-02-701

TOP ASSY. ASYNC. CONTR.
001-04-02-701-707

TOP ASSY UNIT CONTROL TIMING, INTERFACE
010-35-02-701

1980 PRINTER CONTROLLER
010-31-02-701

TOP ASSY. RBT. LINE PRINTER CONTR
010-36-02-701

TOP ASSY VOGUE DUAL PRINTER CONTR.
010-32-02-701

PARALLEL PTR INTERFACE CONTR 1K BUFFER
010-48-02-701/702

TOP ASSY. CARD READER CONTROLLER
010-33-02-701

MAGNETIC TAPE INTERFACE CONTR. 1K BUFFER
010-48-02-701

CYCLIC CHECK CODE CONVERTR BUFFER TOP ASSY.
010-38-02-701-710

MAGNETIC TAPE INTERFACE CONTR. 2K BUFFER
010-48-02-702

FLOPPY DISC CONTROLLER
010-40-02-701

MAGNETIC TAPE EXPANSION KIT
010-43-10-701

LARGE P.C. BOARDS

DATA FLOW
047-20-02-701-703

PROGRAMABLE BAUD RATE (MPC)
047-35-02-701
(REPLACES 047-32-02-701)

SYSTEM MEMORY 16 K WORD/32K BYTES
986-01-08-001

SYSTEM MEMORY 8K WORD/16K BYTES
984-01-07-001

REFRESH SLAVE (2 DISPLAYS)
047-19-02

706-709, 711, 713

705, 714

REFRESH MASTER 80/64 CHAR/LINE
047-26-02-701-710
(REPLACES 047-17-02-701-705)

EXPANSION KIT
047-19-10-701

REFRESH SLAVE (6 DISPLAYS)
047-19-02

701-705, 710, 712, 714

SCREEN BUFFER II
047-36-02-702-708
(REPLACES 047-45-02-702-708)

SCREEN BUFFER II
047-36-02-701
(REPLACES 047-15-02-701)

EXPANSION KIT
047-15-10-701

EUSS STRIP SUB-ASSY
047-34-02-701

CENTRONICS PRINTER
032-42-01-701
032-43-01-701
032-44-01-701
032-45-01-701
032-46-01-701
032-47-01-701
032-48-01-701
032-49-01-701
032-50-01-701
032-51-01-701
032-52-01-701
032-53-01-701
032-54-01-701
032-55-01-701
032-56-01-701
032-57-01-701
032-58-01-701
032-59-01-701
032-60-01-701
032-61-01-701
032-71-01-701
032-72-01-701
032-73-01-701
032-74-01-701
032-75-01-701
032-76-01-701

AUX. OPER. TERM.
058-10-01-701

EXTENDED DRIVE KEYBOARD ASSY. LUCOTERM STD. KYBRD MARKING
055-11-01-701-709

EXTENDED DRIVE KYBRD ASSY PARS KYBRD MARKING
055-12-01-701

LOW SPEED PRINTER (EXTER)
049-12-01-701-704

TOP CHASSIS ASSY.
047-10-01-701

15 PIN I/O CLB CENTRONICS PTR. SPD 20/20
058-10-30-701

CABLE ASSY FULL DUPLEX "Y" MODEM M CHART
010-15-10-701

SKIN ASSY.
047-10-02-701

KEYBOARD & CONSOLE
047-22-02-701

JUMPER ASSY.
047-10-75-701

A.C. POWER WIRING
047-10-05-701

CASSETTE CONTROLLER
047-21-02-701

DOOR ASSY
047-10-57-701

TOP ASSY POWER SUPPLY
047-13-20-701
(SEE SHT 2)

SMCTU II
64/80 CHAR. LINE
047-37-02-702
(REPLACES 047-16-02-701/702)

POWER WIRING SCHEMATIC
047-10-56-001

TPU CONTROL
047-23-02-701

TAPE CASSETTE ASSY.
047-10-61-701

WIRE WRAP CHASSIS ASSY
047-10-03-702

CASSETTE HINGE ADAPTOR PLATE
047-10-58-701

(1) TAPE CASSETTE SPEC. (DEVICE)
983-02-01-001

TAPE CASSETTE PRE-AMP BRD ASSY
047-27-02-701

TAPE CASSETTE SPEC. (CLUSTER PROGRAM LOADER
983-02-04-001

TAPE CASSETTE CABLE
047-10-60-701

PAC GUIDE ASSY
047-10-51-701

POWER WIRING HARNESS
047-10-06-701

RESISTOR BRD. ASSY.
047-33-02-701

COAX CONN. ASSY
047-10-67-701

BASE PLATE ASSY.
047-10-77-702

CONN. ASSY.
047-10-78-701

BASE PLATE ASSY/W POWER WIRING
047-10-49-702

BOOT SWITCH ASSY.
009-10-18-701

WIRE LIST
047-10-50-701

TEST CONSOLE CONN. ASSY.
047-10-84-701

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation with out its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

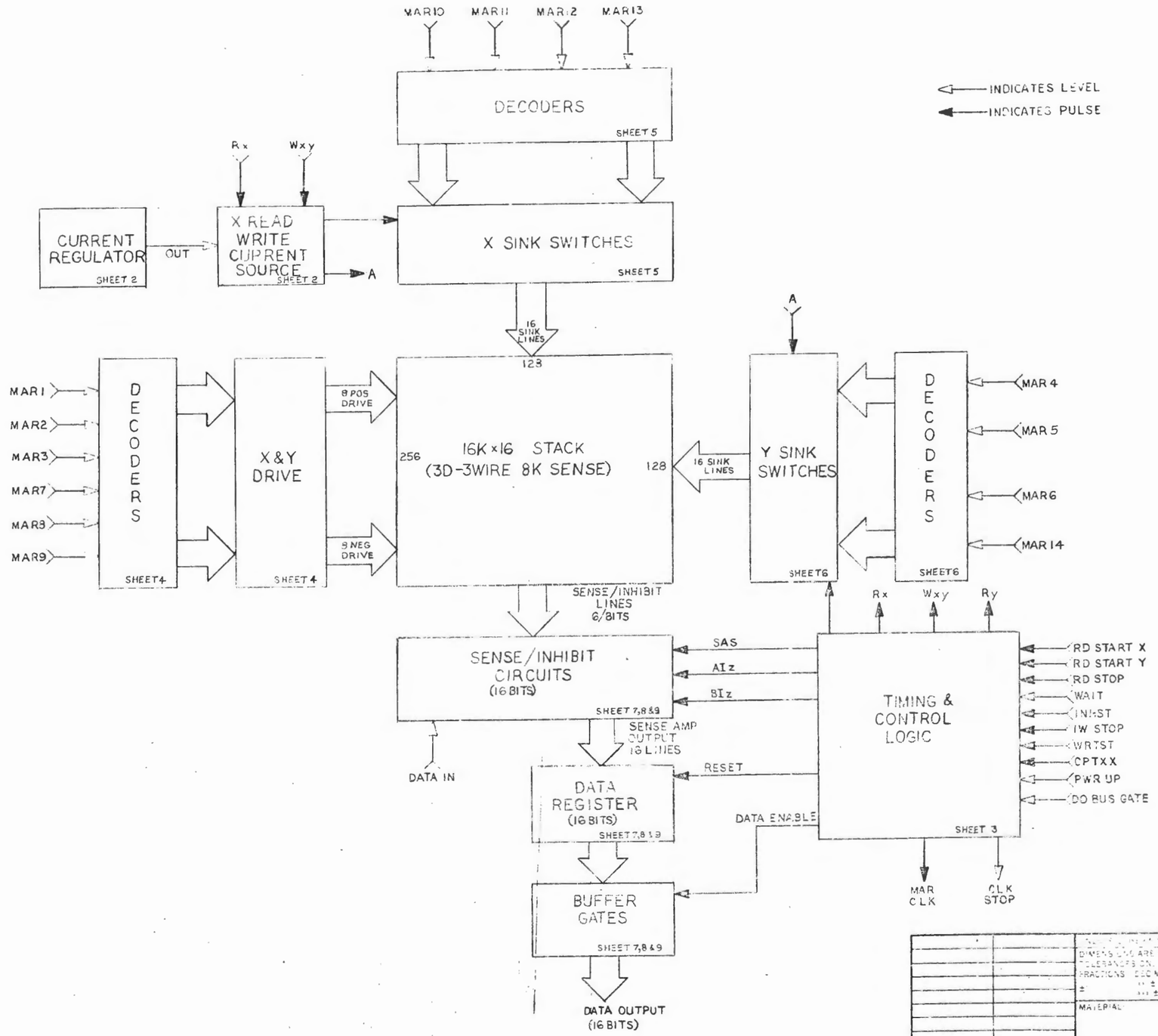
DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
3 PLACE DECIMAL ± .005
2 PLACE DECIMAL ± .02
ANGULAR ± 1°

DRAWN V. CURREN	DATE	
CHECKED L. REGE	DATE	
ENGINEER V. CURREN	DATE	
APPROVED R. MARCHANT	DATE	
FIRST USED ON		

TITLE DOCUMENT TREE CLUSTER SPD 20/20 001

SIZE	DOCUMENT NUMBER	REV
D	047-01-01	U

SCALE NONE — SHT 1 OF 2



— BLOCK DIAGRAM —

NEXT ASSY	USED ON		
APPLICATION			

DIMENSIONS ARE IN INCHES
TOLERANCES ON:
FRACTIONS DECIMALS ANGLES
± .xx ± ±
MATERIAL

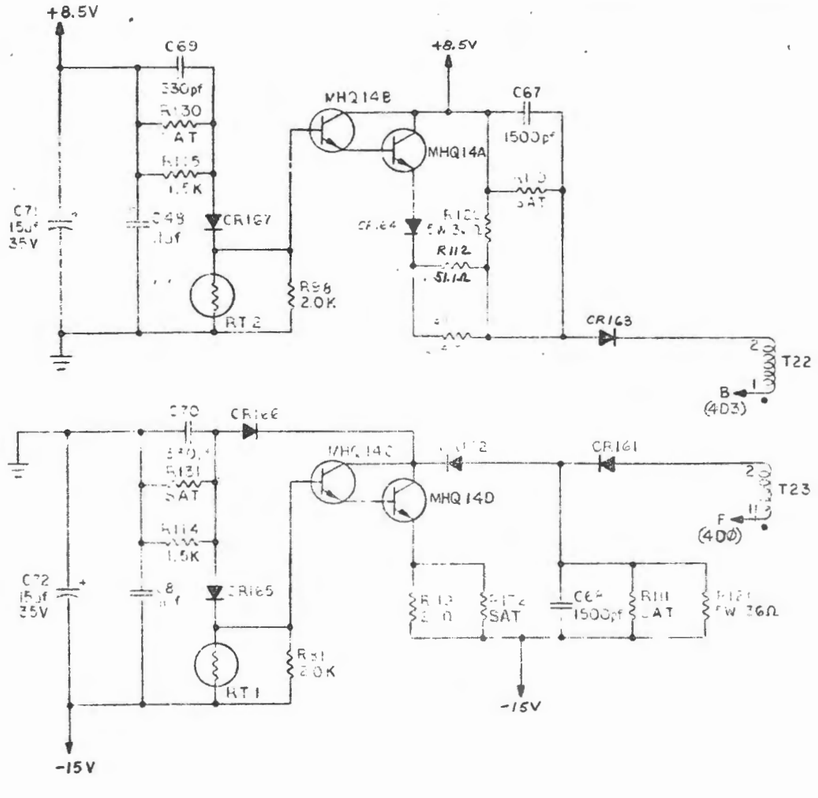
DATARAM CORPORATION

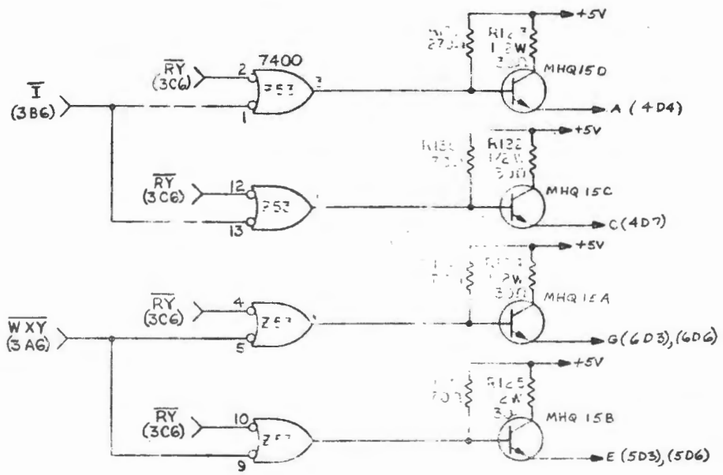
SCHEMATIC DIAGRAM
DR 107 MEMORY SYSTEM

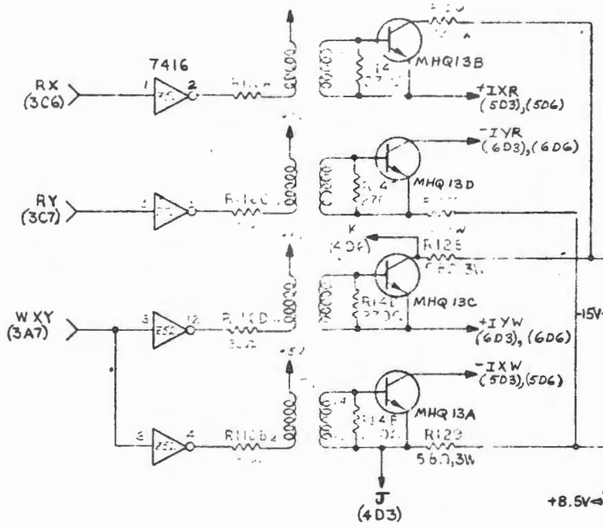
SIZE	DWG. NO.	REV
D	50473	A
SCALE		SHEET 1

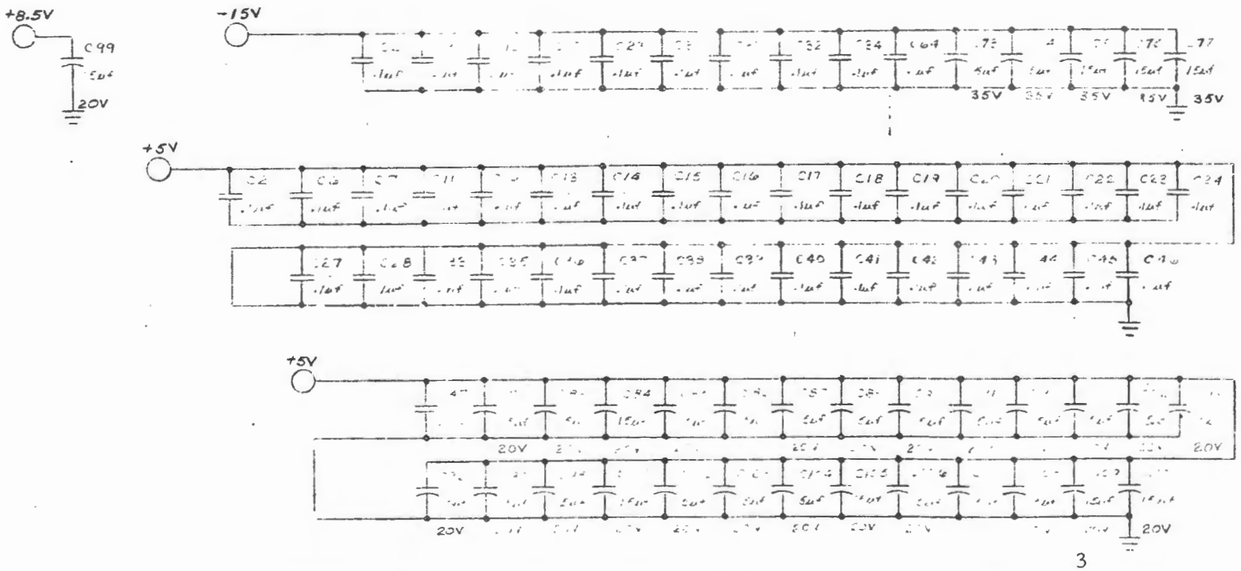
WHEN REFERRING TO THIS DRAWING STATE DRAWING NO., APPLICABLE REVISION LETTER (IF ANY), AND DATE

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED









— CURRENT SOURCE —

UNLESS OTHERWISE SPECIFIED		
DIMENSIONS ARE IN INCHES		
TOLERANCES ON:		
FRACTIONS	DECIMALS	ANGLES
±	.XX ±	±
	.XXX ±	
MATERIAL		

NEXT ASSY	USED ON
APPLICATION	

	NAME	DATE
DRAWN		
CHECKED		
ENGR APPROVED		
MFG APPROVED		

DATARAM CORPORATION
CRANBURY . . NEW JERSEY

SCHEMATIC DIAGRAM
DR 10" MEMORY SYSTEM

SIZE	DEVELOPMENT NO.	DRAWING NO.	REV
D	50473	03000	

SCALE — SHEET 2 OF 9

WHEN REFERRING TO THIS DRAWING STATE DRAWING NO., APPLICABLE REVISION LETTER, IF ANY, AND DATE

3

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

RESET (7A5)(8A5)(9A5)

RD START Y (A30) — R51 100Ω — 74H00 Z47 — Ry Z52-5 (2B4)

RD STOP (A38) — R57C 100Ω — 74132 Z46 — 7440 Z60 — $\overline{Ry}$ (2C4)

PU (3C6) — 7446 — PAST (3B3)

WAIT (A18) — R55C 100Ω — 74H00 Z50

RD START Y (A30) — R55B 100Ω — Z45 — Z49 — Rx Z52-1 (2B4)

+5V — R105 1K — PU (3C8) (3B8)

MARI4 — Z49 — 12/13 Z61 — 7437 — BI2 (9A9) (8A9)

INHST (A4) — R55A 100Ω — Z48 — Z57 — I Z51-12 Z57-12 (4C5) (4B3)

MAR14 (A50) — Z48 — Z62 — AI2 (7A9) (8A9) (9A9)

INH STOP (A40) — R57D 100Ω — Z48 — $\overline{I}$ (2C4) PRST (3B3)

PU (3C6) — WXY (2D4)

W STOP (A57) — R56 100Ω — Z47

WRTST (A46) — R56B 100Ω — WXY Z52-3,13 (2B4)

WXY Z53-1,13 (2C4) — Z63 — 9,10 Z63 — SNK Z48-3,12 (6D3),(7D6)

$\overline{I}$ Z53-5,9 (2D4)

+5V — R101 1K — R102 1K — 74121 Z44 — 74121 Z43

R113 1/10W 2.05K — C143 — C144 — R113 1/10W 1.5K

Z62-4,10 (3C2)

PU — CPTXX (A26) — RG1 100Ω — 7437 — MAR CLK (A24)

+5V — R54 K — PU (3D4)(3C4)

(303) PU — CR118 — R59 — PWR UP (A5) — 7437 — R108 360Ω — R63 220Ω — C50 1uf — C143 .1uf — CLK STOP 2 (B81)

MAR14 — Z62 — 12,13 Z42 — STR A (7D2),(7D6),(8D2) (8D6),(9D2),(9D6)

Z43-6 (3C5) — Z62 — 10 Z42 — STR B (7D2),(7D6),(8D2) (8D6),(9D2),(9D6)

MAR14 — 7437

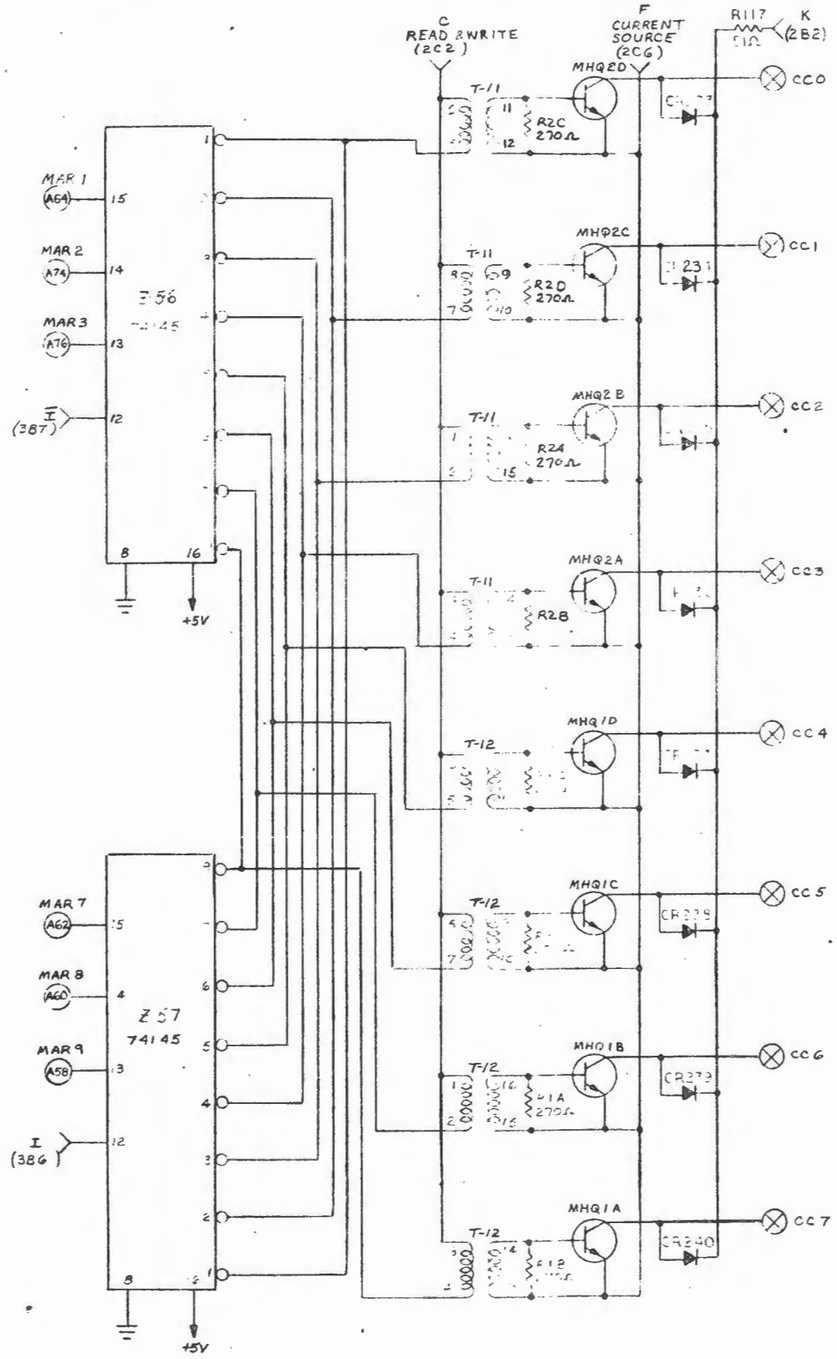
R107 1K — +5V — B52 — 4K SENSE

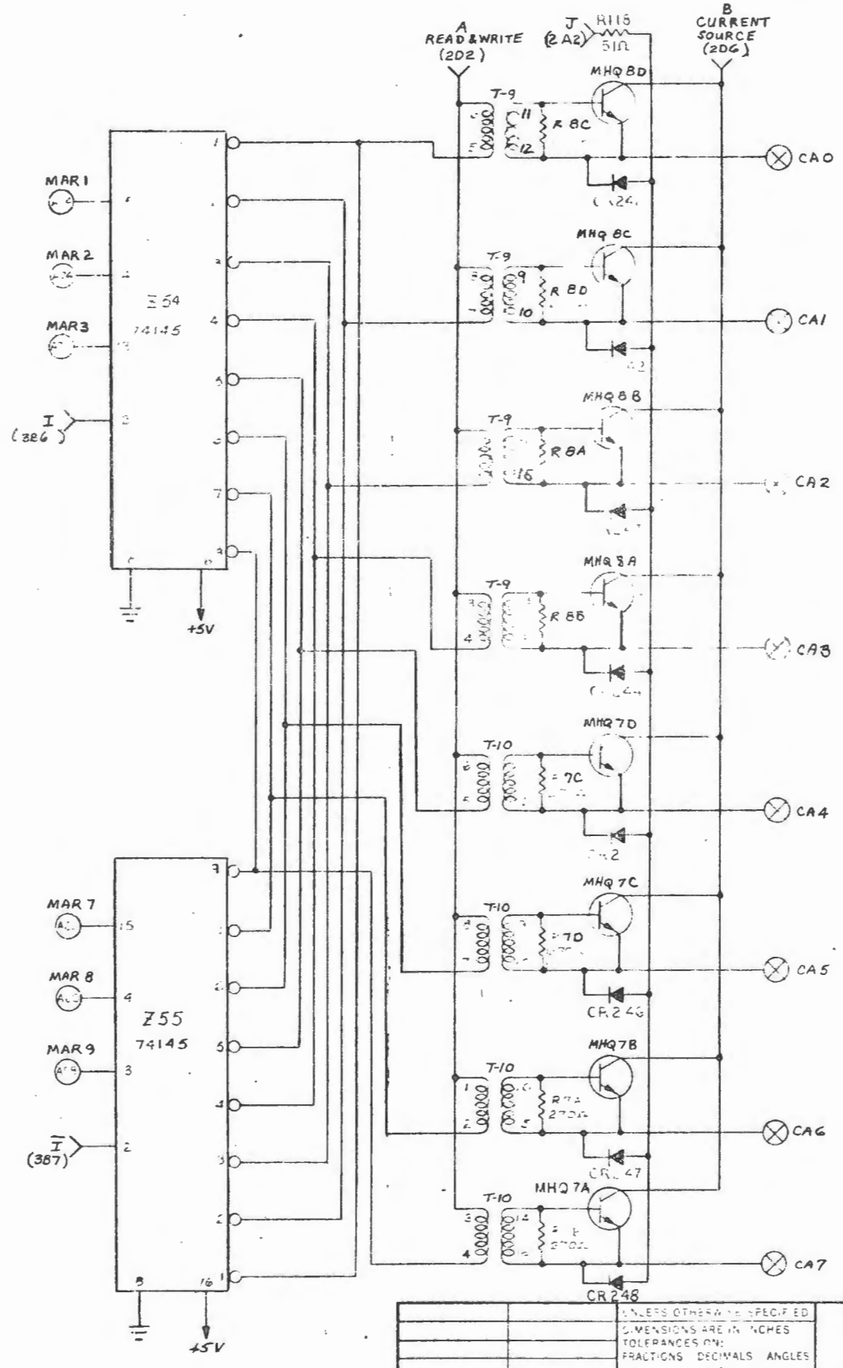
R107 1K — +5V — B54 — 8K SENSE

+8.5V — CR121 5.3V IN746 — R64 — +5V — R65 — 7437 — PRST (3C7)

— TIMING & CONTROL LOGIC —

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±		DATARAM CORPORATION CRANBURY NEW JERSEY	
		MATERIAL	DRAWN	SCHEMATIC DIAGRAM DR 107 MEMORY SYSTEM	
			CHECKED		
			ENGR		
			APPROVED		
NEXT ASSY	USED ON			SIZE D	TOLERANCE NO 50473
APPLICATION				SCALE	SHEET 3 OF 9





REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON:
FRACTIONS DECIMALS ANGLES
± .XX ± ±
MATERIAL

NEXT ASSY | USED ON
APPL DATA

— DRIVE —

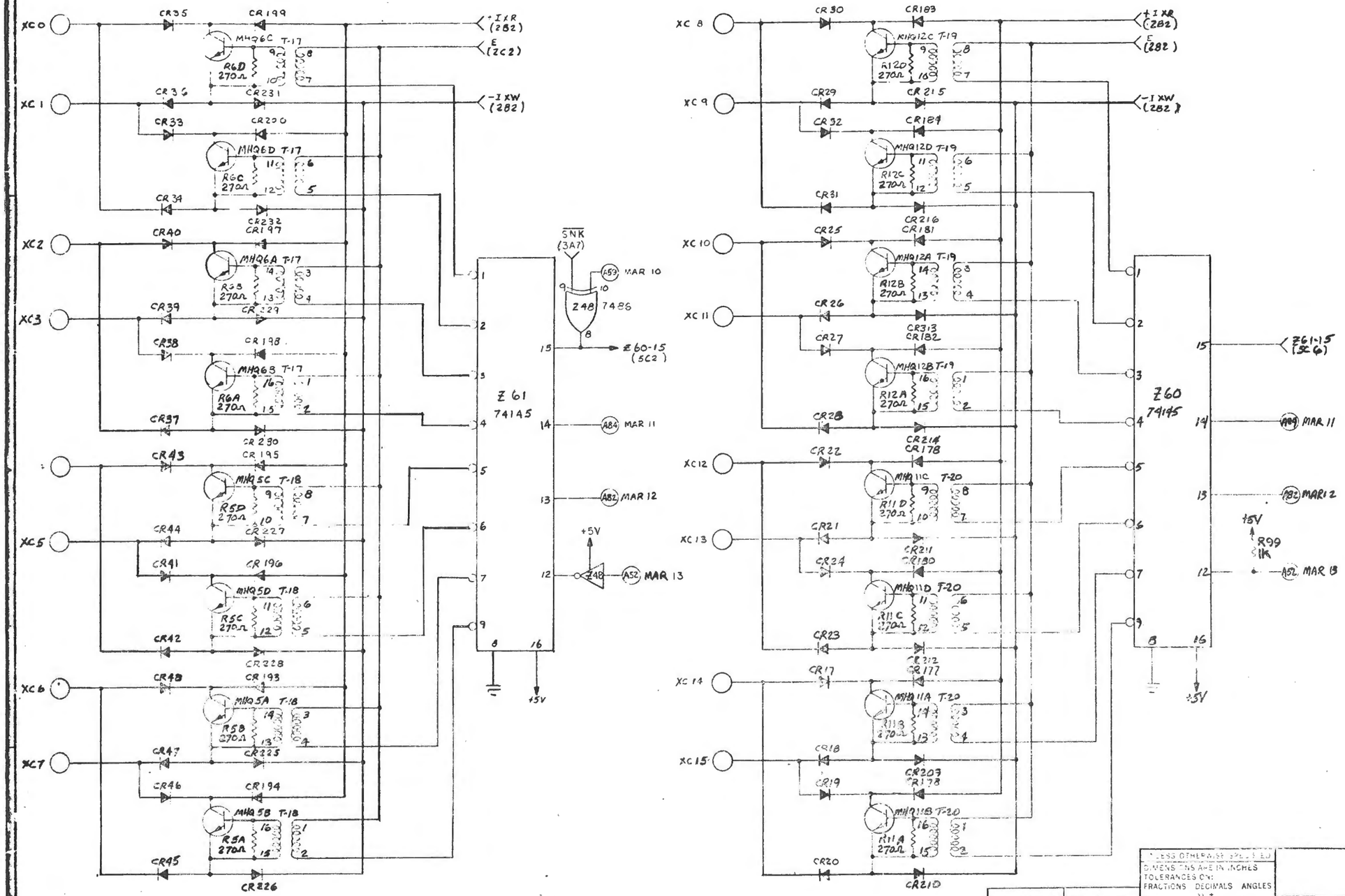
DATARAM CORPORATION
CRANBURY NEW JERSEY

SCHEMATIC DIAGRAM
DR 107 MEMORY SYSTEM

SIZE	FSCM NO.	DRAWING NO.	REV
D	50473	03020	

SCALE — SHEET —

WHEN REFERRING TO THIS DRAWING STATE DRAWING NO. APPLICABLE REVISION LETTER IF ANY AND SIZE



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON:
FRACTIONS DECIMALS ANGLES
± .xx ± .xxx ± ±

MATERIAL

NEXT ASSY | USED ON

APPLICATION

DRAWN | DATE

CHECKED

ENGR APPD

DATARAM CORPORATION

SCHEMATIC DIAGRAM
DR 07 MEMORY SYSTEM

SIZE	DOCUMENT NO.	DRAWING NO.	REV.
D	50473	C3020	

SCALE | SHEET 5 OF 9

LTR	DESCRIPTION	DATE

YC0 CR14 CR175 MHQ10C T-15 R10D 270Ω 9 8 10 7 CR13 CR207 +IYW (2B2) G (2C2)

YC1 CR16 CR170 MHQ10B T-15 R10C 270Ω 11 6 12 5 CR15 CR208 -IYR (2B2)

YC2 CR9 CR173 MHQ10A T-15 R10B 270Ω 14 3 13 4 CR205

YC3 CR10 CR174 MHQ10B T-15 R10A 270Ω 16 1 15 2 CR11 CR206

YC4 CR6 CR171 MHQ9C T-16 R9D 270Ω 9 8 10 7 CR5 CR203

YC5 CR8 CR172 MHQ9D T-16 R9C 270Ω 11 6 13 5 CR7 CR204

YC6 CR1 CR169 MHQ9A T-16 R9B 270Ω 14 3 13 4 CR201

YC7 CR2 CR170 MHQ9B T-16 R9A 270Ω 16 1 15 2 CR3 CR202 CR4

Z58 74145 pins 1 2 3 4 5 6 7 9 13 12 15 14 8 16

Z59-15 (6C2)

A80 MAR 5

A78 MAR 6

A50 MAR 14

+5V

Z4B

C1 1uf +5V

YC8 CR61 CR191 MHQ4C T-13 R4D 270Ω 9 8 10 7 CR52 CR223 +IYW (2B2) G (2C2)

YC9 CR49 CR192 MHQ4D T-13 R4C 270Ω 11 6 12 5 CR50 CR224 -IYR (2B2)

YC10 CR56 CR189 MHQ4A T-13 R4B 270Ω 14 3 15 4 CR55 CR221

YC11 CR54 CR190 MHQ4B T-13 R4A 270Ω 16 1 15 2 CR53 CR222

YC12 CR59 CR187 MHQ3C T-14 R3D 270Ω 9 8 10 7 CR60 CR219

YC13 CR57 CR188 MHQ3D T-14 R3C 270Ω 11 6 12 5 CR58 CR220

YC14 CR64 CR185 MHQ3A T-14 R3B 270Ω 14 3 13 4 CR63 CR217

YC15 CR62 CR186 MHQ3B T-14 R3A 270Ω 16 1 15 2 CR61 CR218

Z59 74145 pins 1 2 3 4 5 6 7 9 13 12 15 14 8 16

SNK (3A7)

Z4B 7486 pins 12 13 11

A54 MAR 4

Z58-15 (6C6)

A80 MAR 5

A78 MAR 6

R180 1K

A50 MAR 14

C3 1uf +5V

-- Y SINK --

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .xx ± .xxx ±

MATERIAL

NEXT ASSY USED ON
APPLICATION

DRAWN
CHECKED
ENG APPR
MFG APPR

DATARAM CORPORATION
PRINCETON, NEW JERSEY

SCHEMATIC DIAGRAM
MEMORY SYSTEM

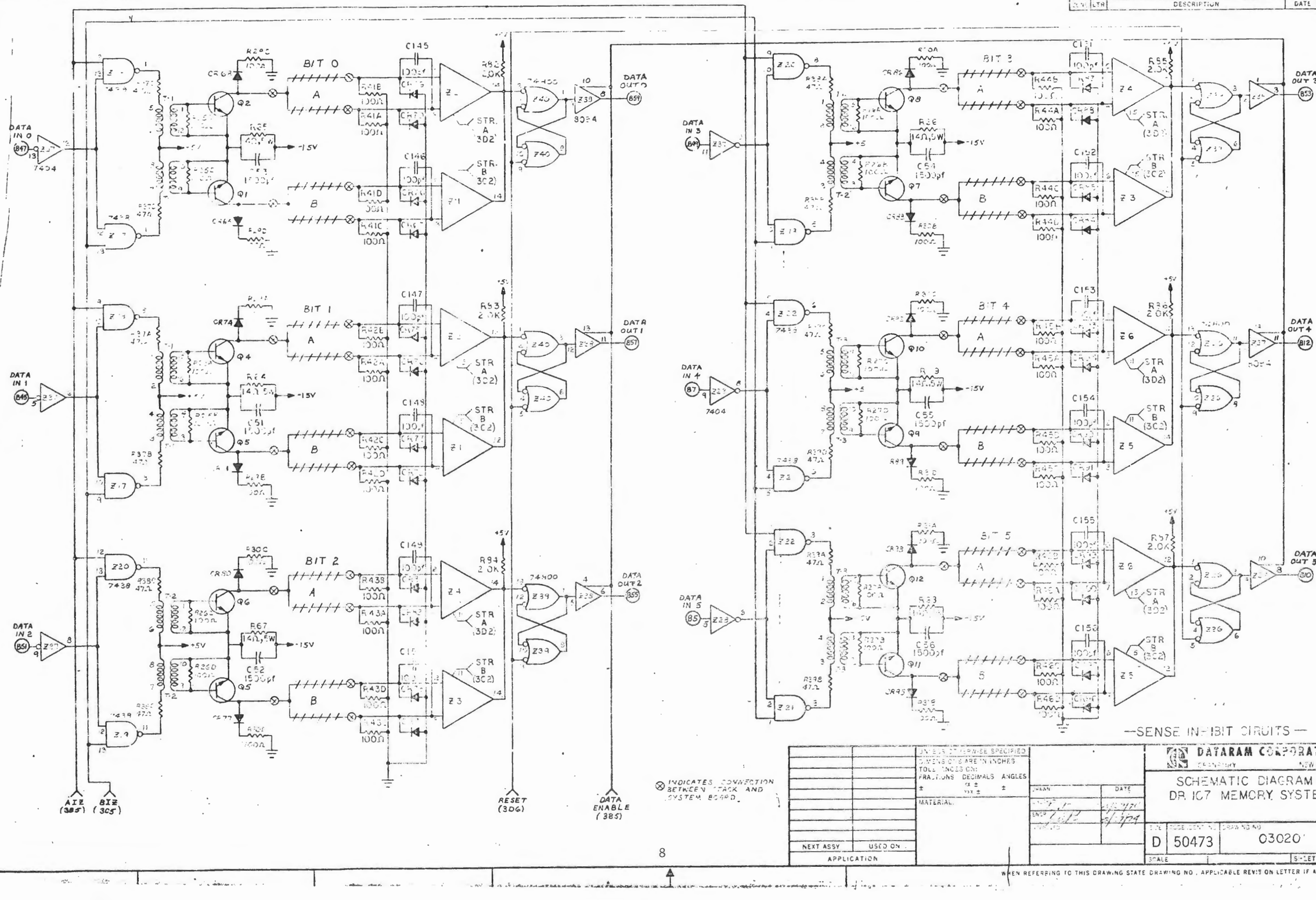
SIZE D | 50473 | REV

SCALE 3/2 | SHEET 7 OF 9

DO NOT SCALE DRAWING

7

A



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±
MATERIAL

NEXT ASSY | USED ON
APPLICATION

DRAWN | DATE
CHECKED | 3/1/74
ENGR | 3/1/74
APPROVED

DATARAM CORPORATION
PRINCETON NEW JERSEY

SCHEMATIC DIAGRAM
DR 107 MEMORY SYSTEM

SIZE D | FSCM NO. 50473 | DRAWING NO. 03020' | REV
SCALE | SHEET 7 OF

WHEN REFERRING TO THIS DRAWING STATE DRAWING NO., APPLICABLE REVISION LETTER IF ANY, AND DATE

LTR	DESCRIPTION	DATE	APPROVED

DATA IN 6 (B11) — 74C4 — DATA IN 7 (B9) — DATA IN 8 (B34) — DATA IN 9 (B41) — DATA IN 10 (B43) — DATA IN 11 (B37)

BIT 6 — BIT 7 — BIT 8 — BIT 9 — BIT 10 — BIT 11

DATA OUT 6 (B8) — DATA OUT 7 (B6) — DATA OUT 8 (B31) — DATA OUT 9 (B29) — DATA OUT 10 (B35) — DATA OUT 11 (B33)

STR A (3D2) — STR B (3C2) — TR (3B2)

A11 (B34) — A12 (B35) — RESET (306) — DATA ENABLE (385)

⊗ INDICATES CONNECTION BETWEEN STACK AND SYSTEM BOARD

— SENSE INHIBIT CIRUITS —

NEXT ASSY	USED ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
MATERIAL

DATARAM CORPORATION
TRENTON, N.J.

SCHEMATIC DIAGRAM
DR 107 MEMORY SYSTEM

SIZE	DRAWING NO.	REV
D	50473	03C20

SHEET 8 OF 9

WHEN REFERRING TO THIS DRAWING ... ALWAYS USE ENTIRE NUMBER AND ALPHABETIC LETTER ...

REVISIONS				
LTR	DESCRIPTION		DATE	APPROVED

DATA IN 12 (B15)
DATA IN 13 (B17)
DATA IN 14 (B19)
DATA IN 15 (B21)
DATA OUT 12 (B26)
DATA OUT 13 (B23)
DATA OUT 14 (B25)
DATA OUT 15 (B27)
A12 (B85) A13 (B65)
RESET (B86)
DATA ENABLE (B85)

BIT 12 BIT 13 BIT 14 BIT 15

CR139 CR140 CR141 CR142 CR143 CR144 CR145 CR146 CR147 CR148 CR149 CR150 CR151 CR152 CR153 CR154 CR155 CR156 CR157 CR158 CR159 CR160

Q25 Q26 Q27 Q28 Q29 Q30 Q31 Q32

C169 C170 C171 C172 C173 C174 C175 C176

R19A R19B R19C R19D R20A R20B R20C R20D R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88

Z9 THRU Z16-4
Z1 THRU Z8-5
Z1 THRU Z8-4
Z9 THRU Z16-5

C127-142 150 PF

C101 15µF 20V

C112 .1µF C113 .22µF C114 .22µF C115 .22µF C116 .22µF C117 .1µF

-5V -15V +5V

AI2 (B85) BI2 (B65)

⊗ INDICATES A CONNECTION BETWEEN STACK AND SYSTEM BOARD

— SENSE INHIBIT CIRUITS —

DATARAM CORPORATION

SCHEMATIC DIAGRAM
DR IC7 MEMORY SYSTEM

SIZE	REVISION	DRAWING
D	50473	03020

SCALE — SHEET 9 OF 9

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
MATERIAL

NEXT ASSY USED ON
APPLICATION

WHEN RE-ERRING TO THIS DRAWING STATE DRAWING NO., APPLICABLE REVISION LETTER, IF ANY, AND DATE

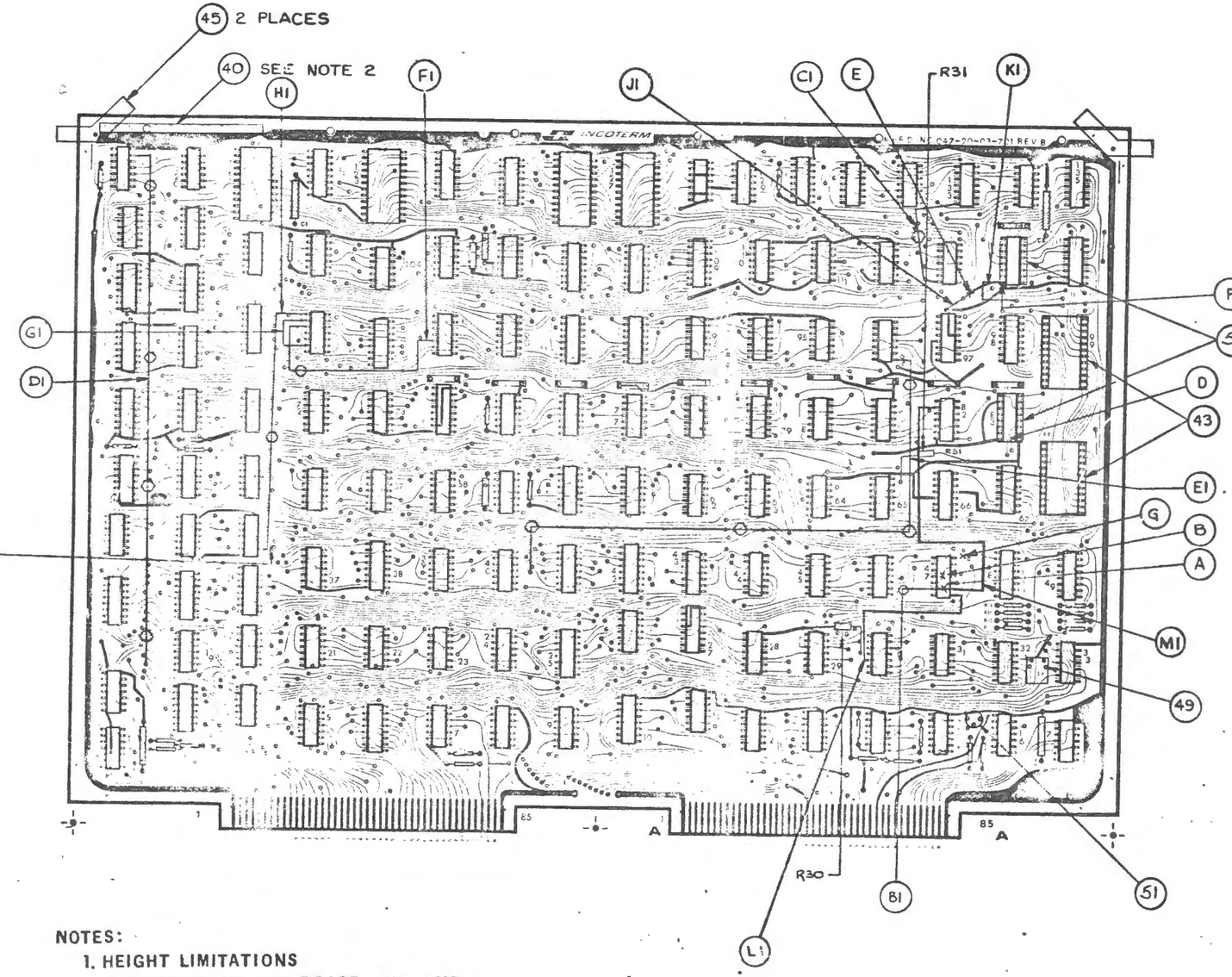
CUT ETCH FROM	
A	M47-02 TO M47-13
B	M47-12 TO EYELET
C	EYELET TO M54-02
D	M83-2 TO EYELET
E	M114-16 TO EYELET
F	M114-16 TO ETCH

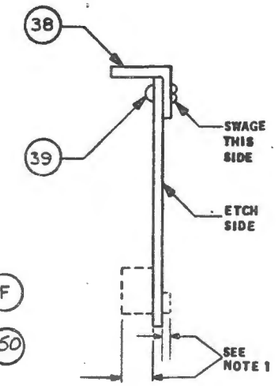
CUT ETCH FROM	
G	M47-01 TO EYELET

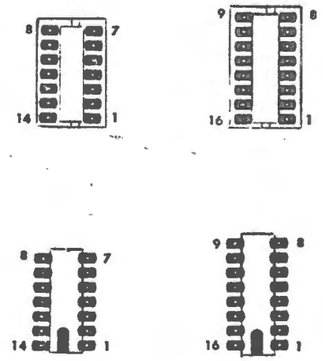
ADD JUMPER WIRE (ITEM 54)

	FROM	TO
~~AI~~	~~EYELET~~	~~M47-02~~
BI	M30-05	M47-13
CI	M133-4	M113-14
DI	M118-06	EYELET
EI	EYELET	M96-01
FI	M89-12	M87-10
GI	M87-13	M87-09
HI	M87-08	M54-02
JI	EYELET	EYELET
KI	M114-16	EYELET
LI	M30-12	M47-1
MI	M82-9	M47-2

58	M29, M87, M105
53	R30
52	R31
51	
50	
49	SW
48	R8
47	R10
46	
45	
44	
43	
42	M68(702&703) M99(703)
41	
40	
39	
38	
37	QI
36	CRI
35	C5-15
34	CI-4
33	RI-7,9,11-28
32	R29
31	
30	M67,98
29	M31
28	M3,6,25,41,69,84,100,107, 108,115,135,10,42
27	MI9,20,23,26,37,40,47,52,53,55, 57,71,73,76,77,102-104,117
26	M48,49
25	MI24
24	MI21,123,126,127
23	M34,36,38,60,61,86,88,91,92
22	M35,51
21	MI30
20	MI01,109,122,125
19	M74
18	
17	M27
16	M4,11,50,120
15	MI6,17,75
14	M7,21,65,90,111,113
13	MI,30,46,54,106,112,132
12	MI4,79,81,134
11	A59
10	MI2,28,32,33,62,64,70, 89,96,129
9	M5,9,13,43,45,56,72,78, 93,95,116,128,133
8	M8,22,24,2,44,63,80, 85,,94,,110,118,131
7	M66,97
6	M62,15,39,58
5	
4	
3	







PIN NUMBERING AND ORIENTATION

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
	D4	RELEASED/RD=7374C	[illegible]	[illegible]
E		REVISED/ECO 3085 6/11/74	[illegible]	[illegible]
F		REVISED/ECO 3085A 9/11/74	[illegible]	[illegible]
	FI	REVISED/ECO 3213 5/23/74	[illegible]	
G		REVISED/ECO 3333		
	GI	REVISED/ECO 3306 8/19/74	[illegible]	
H		REV./ECO 3484 11-18-74	[illegible]	
J		REV/ECO 8805 1-23-75	[illegible]	

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 40
   AND MARK ASSY NO. 047-20-02-70-- AND LATEST ASSY REVISION.
3. ATTACH JUMPER WIRES (ITEM 54) TO BOARD USING GLUE (ITEM 55) IN APPROX. AREAS MARKED (O)
4. SOLDER #18 GA WIRE (ITEM 56) 16 PLACES AS SHOWN USING SLEEVING (ITEM 57) TO AVOID SHORTING TO LANDS.

~~57~~	~~ECT500-15~~	~~SLEEVING (BIRNBACH)~~	~~1.5 FT.~~
~~56~~	~~CB1850L~~	~~WIRE 18 GA BUS~~	~~1.5 FT.~~
55	MC GLUE	HOT MELT GLUE (THERMOGRIP)	.06 OZ.
54	345-02-02-001	WIRE #24 GA SOLID WHITE	3 FT.
34	CSC280MAH/A100K	CAP. .1UF 100V 10% (AMPEREX)	11

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-20-03-701 REV B

ITEM NO	PART ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

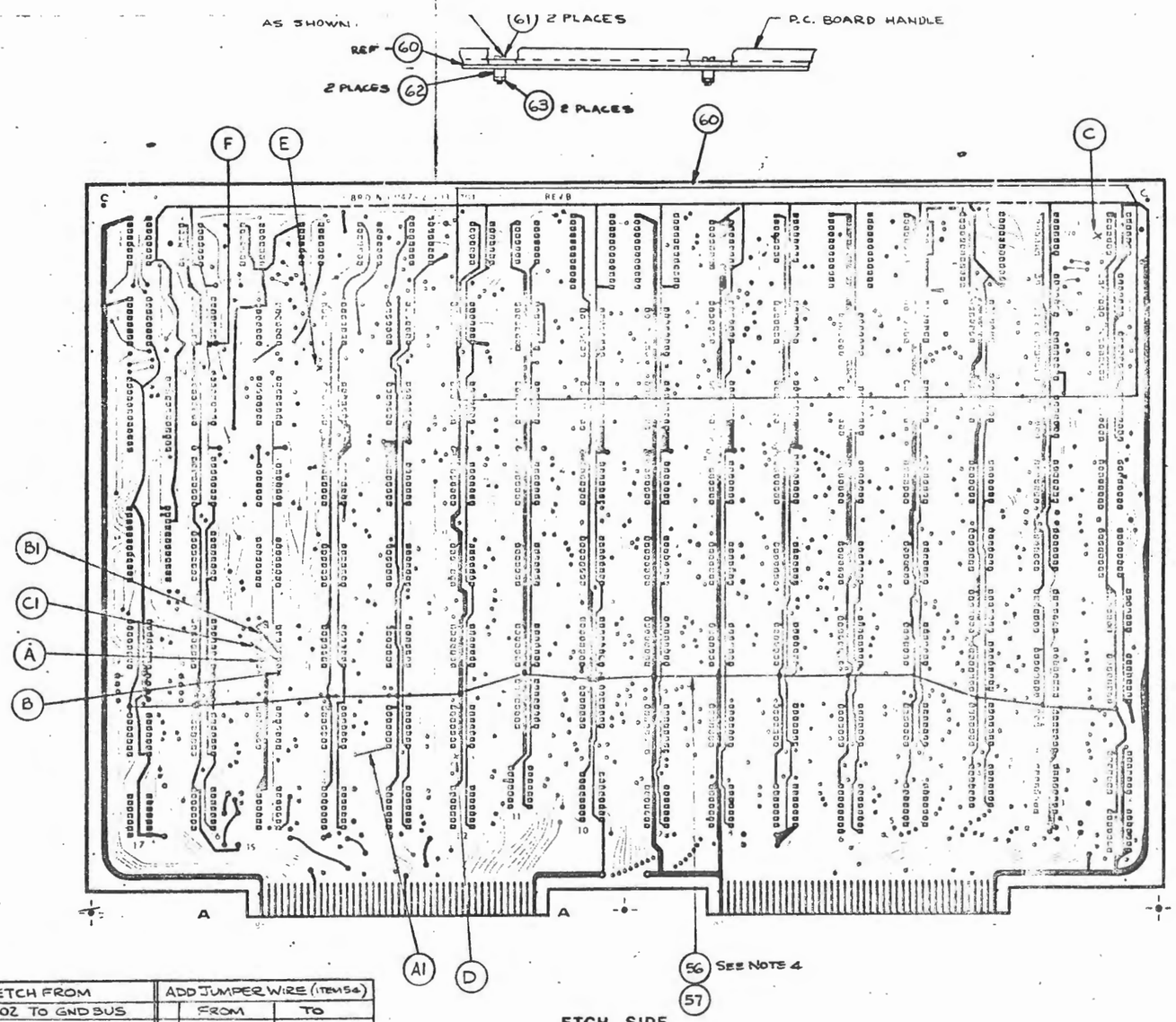
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use

DRAWN [illegible] DATE 5-21-74
CHECKED [illegible] DATE 6/11/74

TITLE: P.C. BOARD ASSY
DATA FLOW 32K
CLUSTER 701-703

SIZE J | DOCUMENT NUMBER 047-20-02 | REV J

1 of 6



	CUT ETCH FROM		ADD JUMPER WIRE (ITEM 54)	
			FROM	TO
A	M47-02 TO GND BUS			
B	M47-12 TO EYELET	A1	M30-12	M29-01
C	M118-05 TO EYELET	B1	M47-07	M47-12
D	M28-02 TO EYELET	C1	EYELET	M47-13
E	M96-01 TO EYELET			
F	M114-16 TO ETCH			

ASSEMBLE WITH ARTWORK 047-20-03-701 REV B

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES
			701 / 702 / / / /

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source"

	DATE	
DRAWN	R.Bruneck	7/8/74
CHECKED	R.Marchant	7/26/74
ENGR APPD	P.Hault	7/31/74
APPROVED	R.Marchant	8/5/74

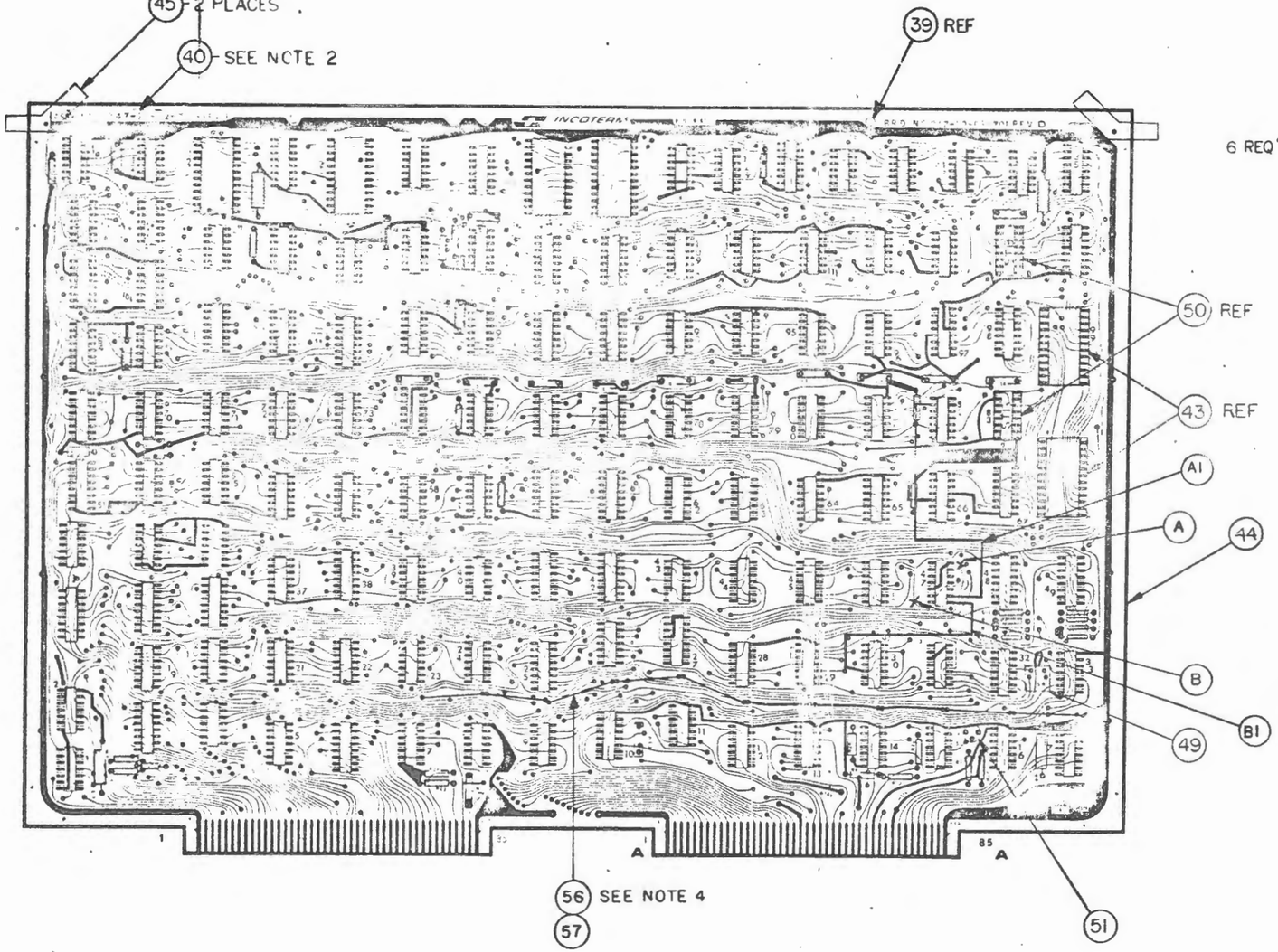
FIRST USED ON

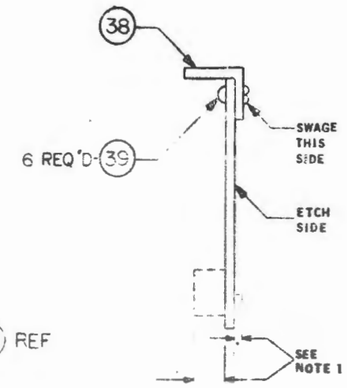
P.C.BD ASSY.
32K DATA FLOW
701-703

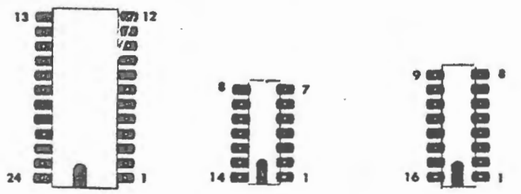
SIZE	DOCUMENT NUMBER	REV
D	047-20-02	J

SCALE 1-1 SHT 2 OF 6

ITEM NO.	REFERENCE DESIGNATION
58	M29,87,105
53	R30
52	R31
51	
50	STBB3,111(SOCKET)
49	SW
48	R8
47	R10
46	
45	
44	
43	M68,99(SOCKET)
42	M66(702 & 703)M99(703)
41	
40	
39	
38	
37	Q1
36	CR1
35	C5-22
34	C1-4
33	R1-7, 9, 11-28
32	R29
31	
30	M67,98
29	M31
28	M3,6,10,25,41,42,69,84,100 107,108,115,135
27	M19-20,23,26,37,40,47,52,53, 55,57,71,73,76,77,102-104,117
26	M18,49
25	M124
24	M121,123,126,127
23	M34,36,38,60,81,85,88,91,92
22	M35,51
21	M130
20	M101,109,122,125
19	M74
18	
17	M27
16	M4,11,50,120
15	M16,17,75
14	M7,21,65,90,111,113
13	M1,30,46,54,106,112,132
12	M14,79,81,134
11	M59
10	M12,28,32,33,62,64,70, 89,96,129
9	M5,[illegible]13,43,45,56,72,78, 93,95,116,128,133
8	M8,22,24,44,[illegible]3,80 M85,94,110,118,131,2
7	M66,97
6	M15,39,58,82
5	
4	
3	
2	
1	







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-20-03-701 REV. D

B	M47-02 TO EYELET	
A	M47-01 TO EYELET	
	CUT ETCH FROM	

B1	M47-01 TO M30-12	
A1	M47-02 TO M82-9	
	ADD JUMPER (ITEM 54) FROM	

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

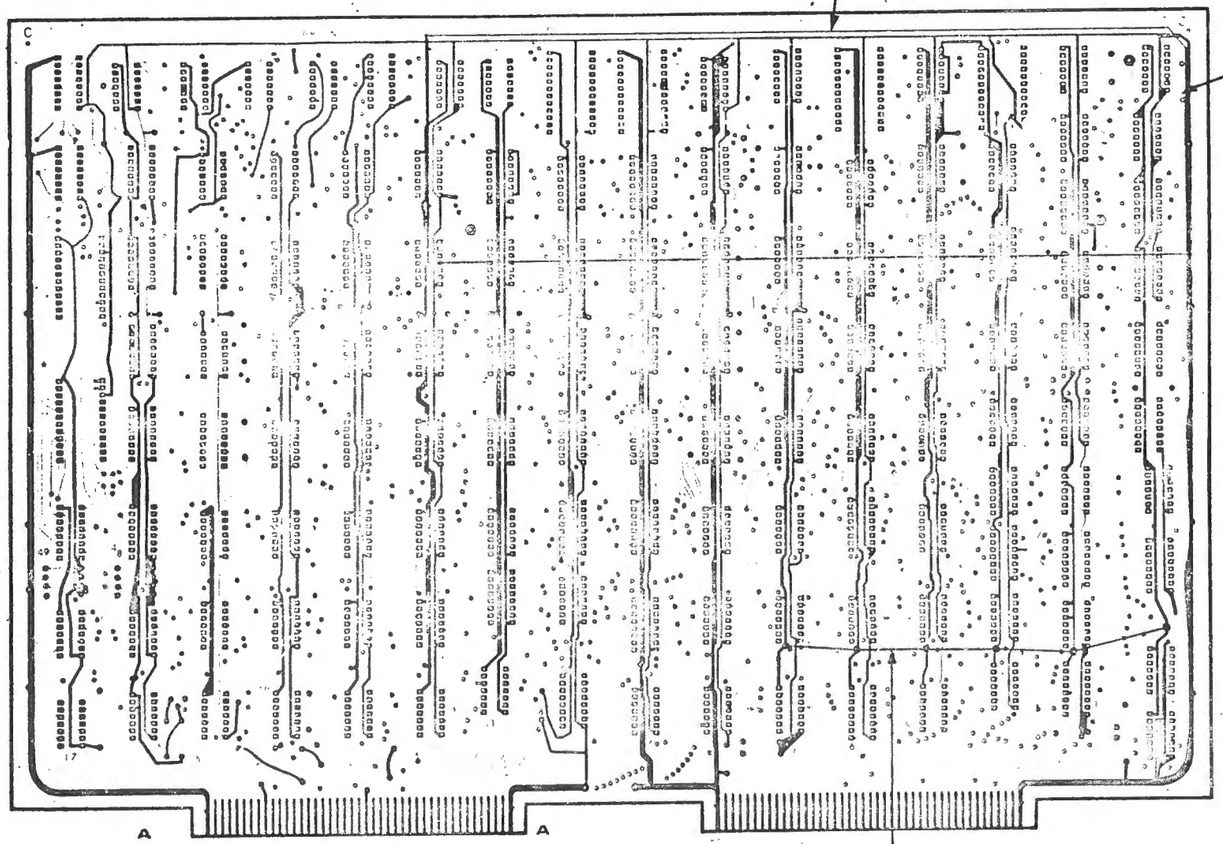
INCOTERM CORPORATION

This document is the property of INCOTERM CORPORATION and is not to be disclosed, reproduced in whole or in part or used for manufacture or otherwise for the benefit of INCOTERM Corporation without its written consent and must return it upon request. INCOTERM Corporation reserves any information obtained in this document. This restriction does not limit the right to use information obtained from another source.

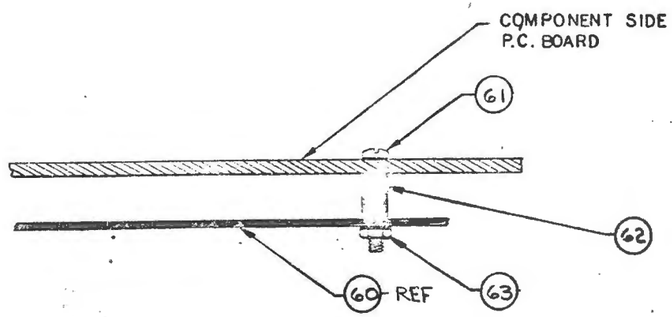
P.C. BOARD ASSY
DATA FLOW 32K
CLUSTER 701-703

DRAWN	A Tanguay	4/1/74	
CHECKED	Phil Franck	4/1/74	
APPROVED		DATE	
FIRST USED ON			

	DESCRIPTION	
D	047-20-02	J
SCALE	1 - 1	3 6



ETCH SIDE



SCALE: NONE

TYP. HWD STACK UP (3 PLACES)

FIG. 1

ASSEMBLE WITH N.T.W.O.# 047-20-03-201 REV D

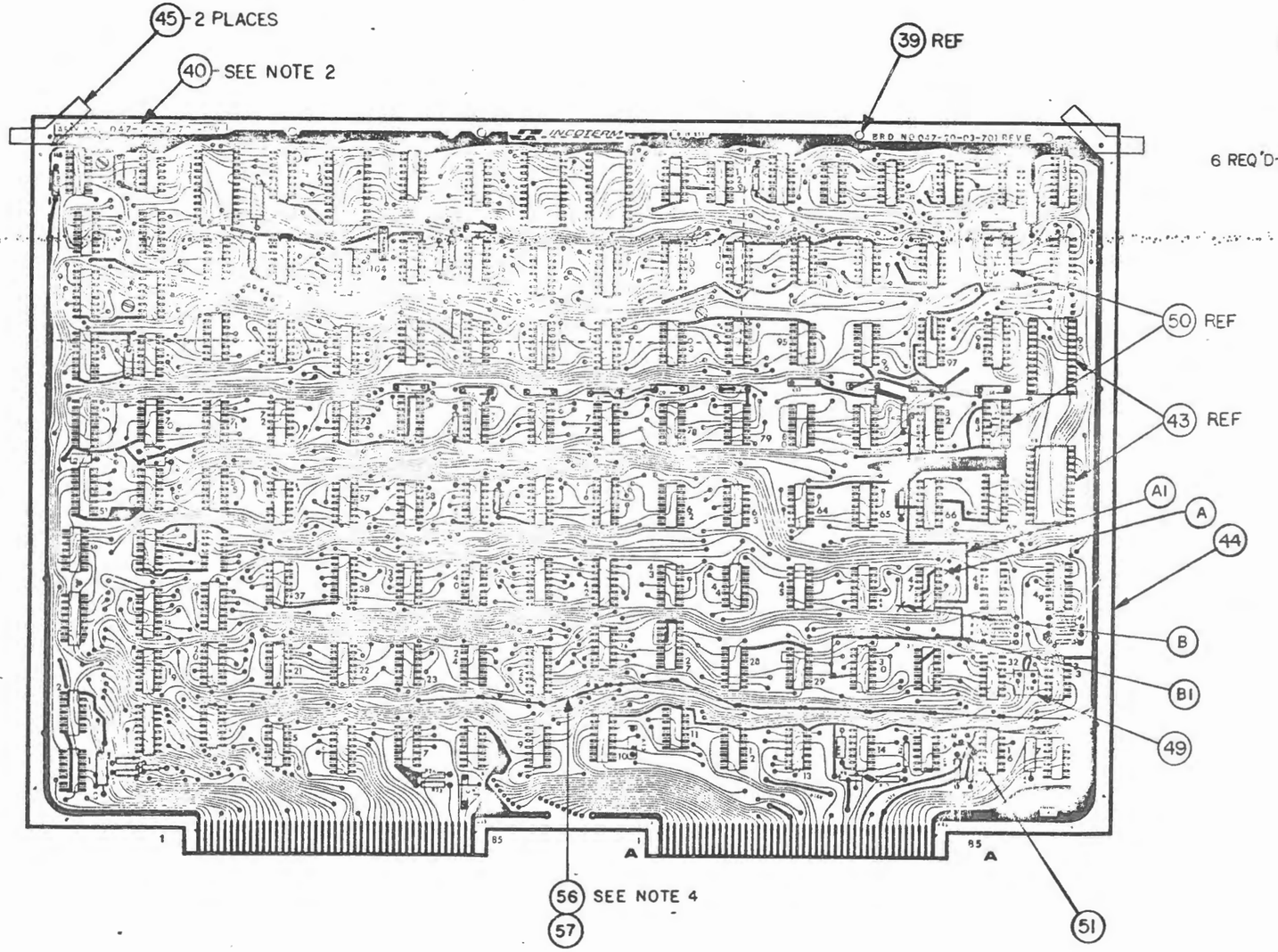
INCOTERM CORPORATION

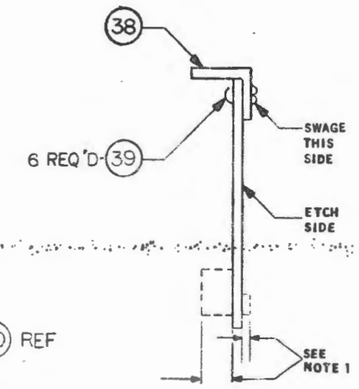
P.C. BOARD ASSY.
32K DATA FLOW-001

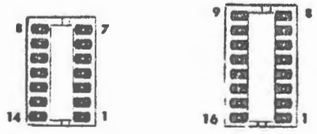
D 047-20-02 J

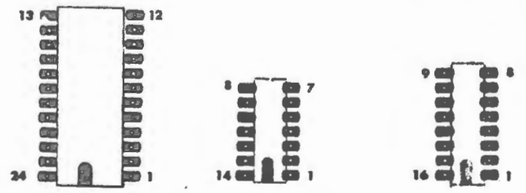
1-1 4 6

ITEM NO.	REFERENCE DESIGNATION
58	M29,87,105
53	R30
52	R31
51	
50	STB83,114(SOCKET)
49	SW
48	R8
47	R10
46	
45	
44	
43	M68,99(SOCKET)
42	M68(702 & 703)MS9(703)
41	
40	
39	
38	
37	Q1
36	CR1
35	C5-22
34	C1-4
33	R1-7, 9, 11-28
32	R29
31	
30	M67,98
29	M31
28	M3,6,10,25,41,42,69,84,100 107,108,115,135
27	M19,20,23,26,37,40,47,52,53, 55,57,71,73,76,77,102-104,117
26	M48,49
25	M124
24	M121,123,126,127
23	M34,36,38,60,61,86,88,91,92
22	M35,51
21	M130
20	M101,109,122,125
19	M74
18	
17	M27
16	M4,11,50,120
15	M16,17,75
14	M7,21,65,90,111,113
13	M1,30,46,54,106,112,132
12	M14,79,81,134
11	M59
10	M12,28,32,33,62,64,70, 89,96,129
9	M5,9,13,43,45,56,72,78, 93,95,116,128,133
8	M8,22,24,44,63,80 M85,94,110,118,131,2
7	M66,97
6	M15,39,58,82
5	
4	
3	
2	
1	









PIN NUMBERING AND ORIENTATION

B	M47-02 TO EYELET
A	M47-01 TO EYELET
	CUT ETCH FROM

B1	M47-01 TO M30-12
A1	M47-02 TO M82-09
	ADD JUMPER (ITEM 54) FROM

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-20-03-701 REV. E

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 5 STRATHMORE ROAD, ATTN: MASS. LETTS 01760

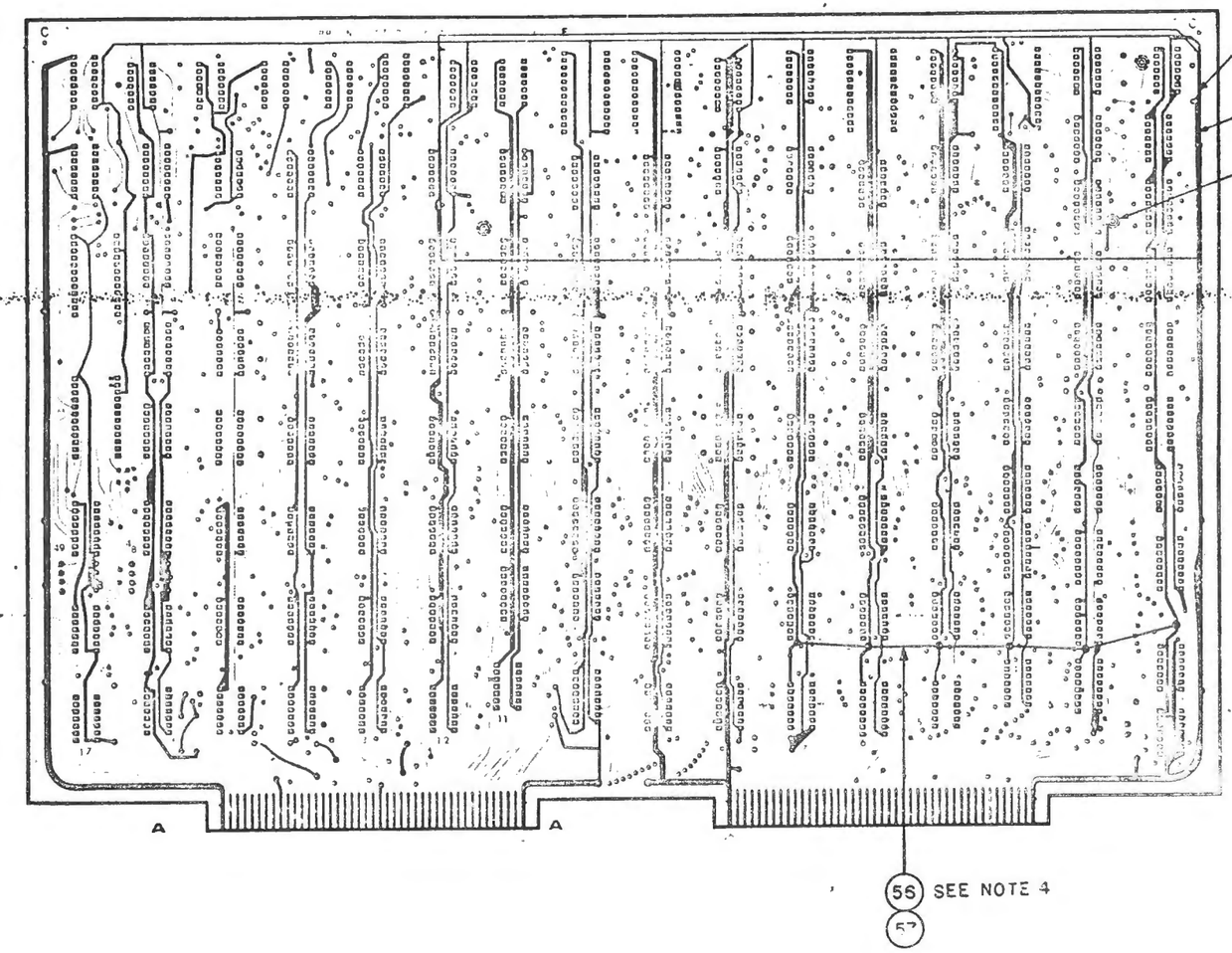
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corp. and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN	
CHECKED	
ENGINEER	
APPROVED	
FIRST USED ON	

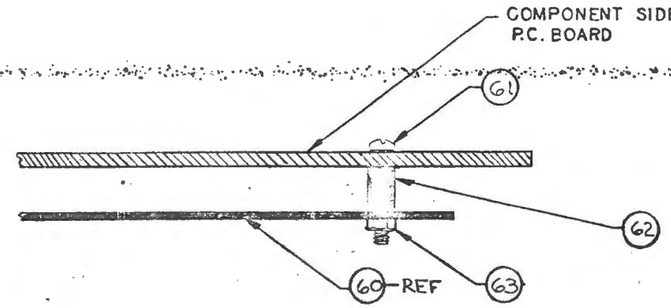
P.C. BOARD ASSY
DATA FLOW 32K
CLUSTER 701-703

SIZE D | DOCUMENT NUMBER 047-20-02 | REV J

SCALE 1-1 | SHT 5 OF 6



ETCH SIDE



(SCALE: NONE)
TYP. HWD STACK UP (3 PLCS)
FIG. 1

ASSEMBLE WITH ARTWORK 047-20-03-701 REV E

INCOTERM CORPORATION

P.C. BOARD ASSY.
32K DATA FLOW-CO

D 047-20-02 J

1-1 6 6

	1	ENG. RELEASE		
	2			
	3	UPDATE Emmett Jan 23,74		
	4	UPDATED CW 7. 5 FEB 74		
A		RELEASED/ RD# 7371C		
B		REVISED/ECO 3085 4/11/74		
C		REVISED/ECO 3085A 4/11/74		
C	1	REVISED/ECO 3213 5/23/74		
C	2	REVISED/ECO 3279 6/24/74		
D		REVISED/ECO 3335 8/12/74		
E		REV/ECO 3803 1-29-75		

NOTES
1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1K OHMS 1/4W ±5%

HIGEST REF DES NOT USED				
R29	CR1	Q1	C15	M135
REF DES NOT USED				
M18, M119				

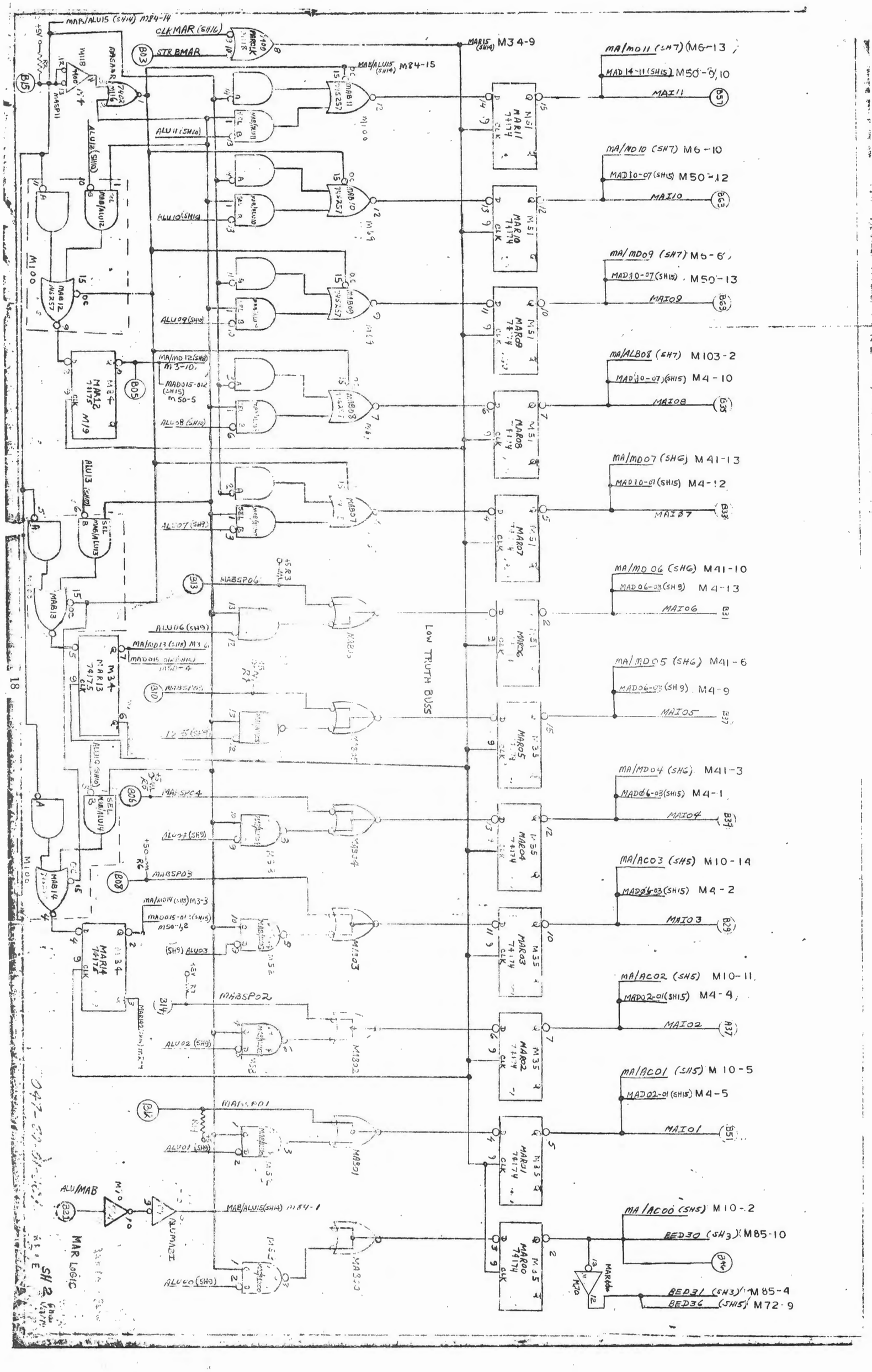
DATA FLOW

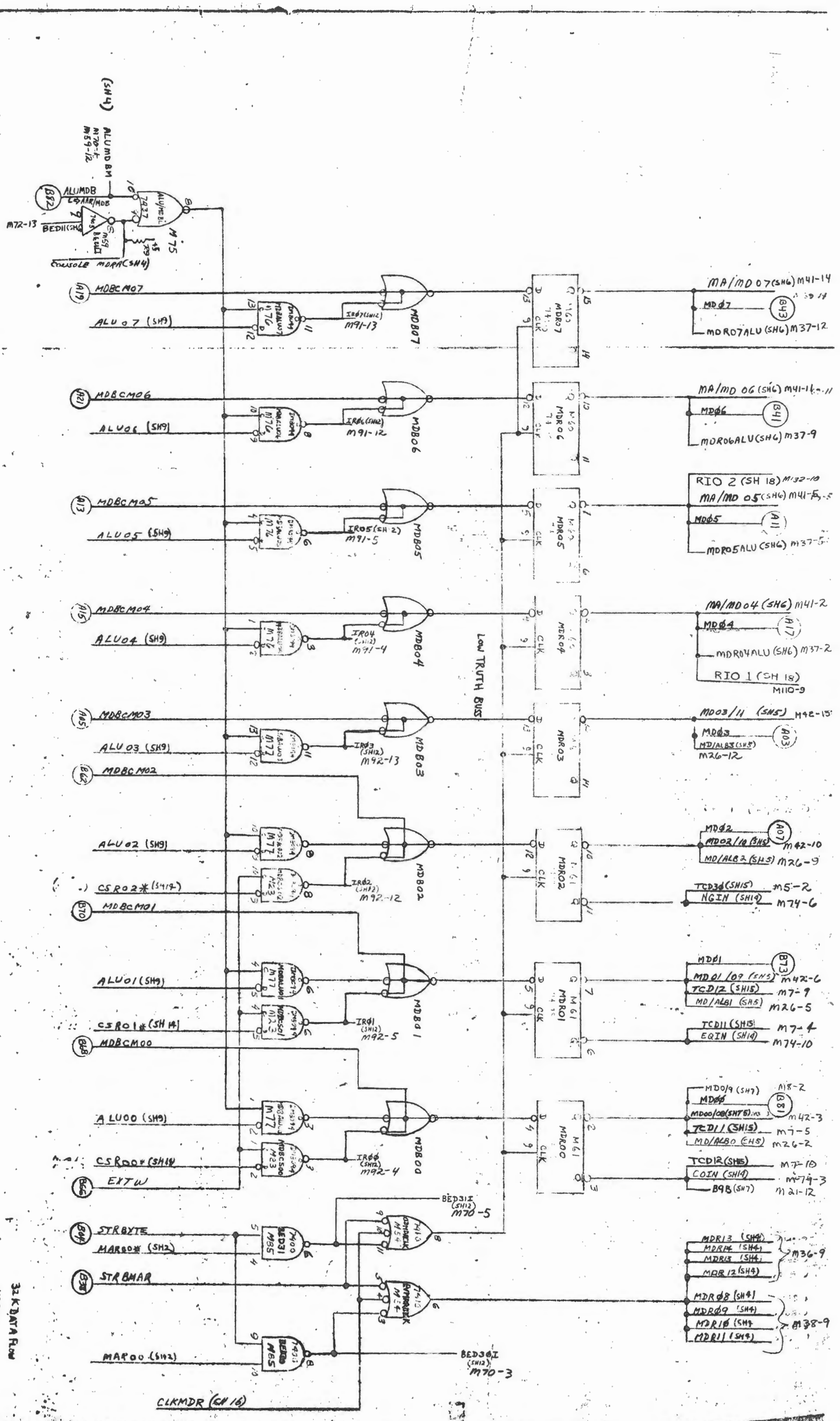
R Frederick 8/20/73
L Bowman 2-15-74
Pritchard 3/21/74
L Bryan (IT) 3/21/74

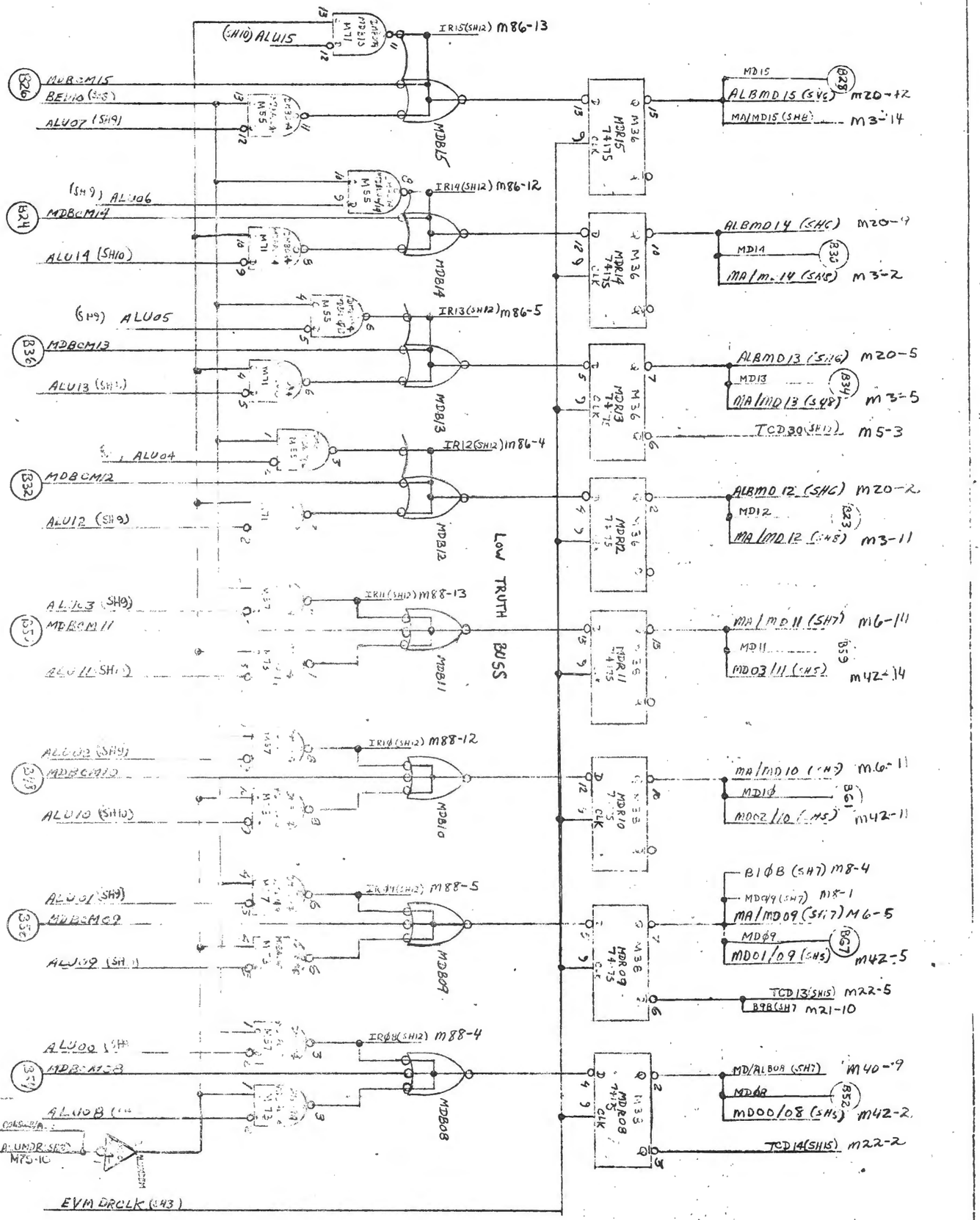
001

D 047-20-01 E

1 18


CLK MAR (SH16)
STR BMAR
MAR15 (SH14) M34-9
MA/MD11 (SH7) M6-13
MAD14-11 (SH15) M50-9,10
MAI11
MA/MD10 (SH7) M6-10
MAD10-07 (SH15) M50-12
MAI10
MA/MD09 (SH7) M5-6
MAD10-07 (SH15) M50-13
MAI09
MA/ALB08 (SH7) M103-2
MAD10-07 (SH15) M4-10
MAI08
MA/MD07 (SH6) M41-13
MAD10-07 (SH15) M4-12
MAI07
MA/MD06 (SH6) M41-10
MAD06-03 (SH9) M4-13
MAI06
MA/MD05 (SH6) M41-6
MAD06-03 (SH9) M4-9
MAI05
MA/MD04 (SH6) M41-3
MAD06-03 (SH15) M4-1
MAI04
MA/AC03 (SH5) M10-14
MAD06-03 (SH15) M4-2
MAI03
MA/AC02 (SH5) M10-11
MAD02-01 (SH15) M4-4
MAI02
MA/AC01 (SH15) M10-5
MAD02-01 (SH15) M4-5
MAI01
MA/AC00 (SH5) M10-2
BED30 (SH3) M85-10
BED31 (SH3) M85-4
BED36 (SH15) M72-9
MAR LOGIC
LOW TRUTH BUSS
ALU/MAB
MAB/ALU15 (SH14) M84-14
MAB/ALU15 (SH14) M84-15
ALU11 (SH10)
ALU10 (SH10)
ALU09 (SH10)
ALU08 (SH10)
ALU07 (SH9)
ALU06 (SH9)
ALU05 (SH9)
ALU04 (SH9)
ALU03 (SH9)
ALU02 (SH9)
ALU01 (SH9)
ALU00 (SH9)
MABSP06
MABSP04
MABSP03
MABSP02
MABSP01
MA/MD12 (SH8) M3-10
MAD015-012 (SH15) M50-5
MA/MD13 (SH8) M3-6
MAD015-012 (SH15) M50-4
MA/MD14 (SH8) M3-3
MAD015-01 (SH15) M50-1,2
MAR11 74174
MAR10 74174
MAR09 74174
MAR08 74174
MAR07 74174
MAR06 74174
MAR05 74174
MAR04 74174
MAR03 74174
MAR02 74174
MAR01 74174
MAR00 74174
MAR13 74175
MAR14 74175
MAR12 74175
MA12 74175
MAB11 74S257
MAB10 74S257
MAB09 74S257
MAB08 74S257
MAB07
MAB06
MAB05
MAB04
MAB03
MAB02
MAB01
MAB00
ALUMA21
M100
M119
M134
M135
M136
M137
M138
M139
M140
M141
M142
M143
M144
M145
M146
M147
M148
M149
M150
M151
M152
M153
M154
M155
M156
M157
M158
M159
M160
M161
M162
M163
M164
M165
M166
M167
M168
M169
M170
M171
M172
M173
M174
M175
M176
M177
M178
M179
M180
M181
M182
M183
M184
M185
M186
M187
M188
M189
M190
M191
M192
M193
M194
M195
M196
M197
M198
M199
M200
M201
M202
M203
M204
M205
M206
M207
M208
M209
M210
M211
M212
M213
M214
M215
M216
M217
M218
M219
M220
M221
M222
M223
M224
M225
M226
M227
M228
M229
M230
M231
M232
M233
M234
M235
M236
M237
M238
M239
M240
M241
M242
M243
M244
M245
M246
M247
M248
M249
M250
M251
M252
M253
M254
M255
M256
M257
M258
M259
M260
M261
M262
M263
M264
M265
M266
M267
M268
M269
M270
M271
M272
M273
M274
M275
M276
M277
M278
M279
M280
M281
M282
M283
M284
M285
M286
M287
M288
M289
M290
M291
M292
M293
M294
M295
M296
M297
M298
M299
M300
M301
M302
M303
M304
M305
M306
M307
M308
M309
M310
M311
M312
M313
M314
M315
M316
M317
M318
M319
M320
M321
M322
M323
M324
M325
M326
M327
M328
M329
M330
M331
M332
M333
M334
M335
M336
M337
M338
M339
M340
M341
M342
M343
M344
M345
M346
M347
M348
M349
M350
M351
M352
M353
M354
M355
M356
M357
M358
M359
M360
M361
M362
M363
M364
M365
M366
M367
M368
M369
M370
M371
M372
M373
M374
M375
M376
M377
M378
M379
M380
M381
M382
M383
M384
M385
M386
M387
M388
M389
M390
M391
M392
M393
M394
M395
M396
M397
M398
M399
M400
M401
M402
M403
M404
M405
M406
M407
M408
M409
M410
M411
M412
M413
M414
M415
M416
M417
M418
M419
M420
M421
M422
M423
M424
M425
M426
M427
M428
M429
M430
M431
M432
M433
M434
M435
M436
M437
M438
M439
M440
M441
M442
M443
M444
M445
M446
M447
M448
M449
M450
M451
M452
M453
M454
M455
M456
M457
M458
M459
M460
M461
M462
M463
M464
M465
M466
M467
M468
M469
M470
M471
M472
M473
M474
M475
M476
M477
M478
M479
M480
M481
M482
M483
M484
M485
M486
M487
M488
M489
M490
M491
M492
M493
M494
M495
M496
M497
M498
M499
M500
M501
M502
M503
M504
M505
M506
M507
M508
M509
M510
M511
M512
M513
M514
M515
M516
M517
M518
M519
M520
M521
M522
M523
M524
M525
M526
M527
M528
M529
M530
M531
M532
M533
M534
M535
M536
M537
M538
M539
M540
M541
M542
M543
M544
M545
M546
M547
M548
M549
M550
M551
M552
M553
M554
M555
M556
M557
M558
M559
M560
M561
M562
M563
M564
M565
M566
M567
M568
M569
M570
M571
M572
M573
M574
M575
M576
M577
M578
M579
M580
M581
M582
M583
M584
M585
M586
M587
M588
M589
M590
M591
M592
M593
M594
M595
M596
M597
M598
M599
M600
M601
M602
M603
M604
M605
M606
M607
M608
M609
M610
M611
M612
M613
M614
M615
M616
M617
M618
M619
M620
M621
M622
M623
M624
M625
M626
M627
M628
M629
M630
M631
M632
M633
M634
M635
M636
M637
M638
M639
M640
M641
M642
M643
M644
M645
M646
M647
M648
M649
M650
M651
M652
M653
M654
M655
M656
M657
M658
M659
M660
M661
M662
M663
M664
M665
M666
M667
M668
M669
M670
M671
M672
M673
M674
M675
M676
M677
M678
M679
M680
M681
M682
M683
M684
M685
M686
M687
M688
M689
M690
M691
M692
M693
M694
M695
M696
M697
M698
M699
M700
M701
M702
M703
M704
M705
M706
M707
M708
M709
M710
M711
M712
M713
M714
M715
M716
M717
M718
M719
M720
M721
M722
M723
M724
M725
M726
M727
M728
M729
M730
M731
M732
M733
M734
M735
M736
M737
M738
M739
M740
M741
M742
M743
M744
M745
M746
M747
M748
M749
M750
M751
M752
M753
M754
M755
M756
M757
M758
M759
M760
M761
M762
M763
M764
M765
M766
M767
M768
M769
M770
M771
M772
M773
M774
M775
M776
M777
M778
M779
M780
M781
M782
M783
M784
M785
M786
M787
M788
M789
M790
M791
M792
M793
M794
M795
M796
M797
M798
M799
M800
M801
M802
M803
M804
M805
M806
M807
M808
M809
M810
M811
M812
M813
M814
M815
M816
M817
M818
M819
M820
M821
M822
M823
M824
M825
M826
M827
M828
M829
M830
M831
M832
M833
M834
M835
M836
M837
M838
M839
M840
M841
M842
M843
M844
M845
M846
M847
M848
M849
M850
M851
M852
M853
M854
M855
M856
M857
M858
M859
M860
M861
M862
M863
M864
M865
M866
M867
M868
M869
M870
M871
M872
M873
M874
M875
M876
M877
M878
M879
M880
M881
M882
M883
M884
M885
M886
M887
M888
M889
M890
M891
M892
M893
M894
M895
M896
M897
M898
M899
M900
M901
M902
M903
M904
M905
M906
M907
M908
M909
M910
M911
M912
M913
M914
M915
M916
M917
M918
M919
M920
M921
M922
M923
M924
M925
M926
M927
M928
M929
M930
M931
M932
M933
M934
M935
M936
M937
M938
M939
M940
M941
M942
M943
M944
M945
M946
M947
M948
M949
M950
M951
M952
M953
M954
M955
M956
M957
M958
M959
M960
M961
M962
M963
M964
M965
M966
M967
M968
M969
M970
M971
M972
M973
M974
M975
M976
M977
M978
M979
M980
M981
M982
M983
M984
M985
M986
M987
M988
M989
M990
M991
M992
M993
M994
M995
M996
M997
M998
M999
M1000


(SH4)
ALU MD BM
M72-13
BED11(SH4)
ENABLE MDRAM(SH4)
M75
MDBCM07
ALU07 (SH9)
MDB07
MDBCM06
ALU06 (SH9)
MDB06
MDBCM05
ALU05 (SH9)
MDB05
MDBCM04
ALU04 (SH9)
MDB04
MDBCM03
ALU03 (SH9)
MDB03
MDBCM02
ALU02 (SH9)
CSR02* (SH17)
MDB02
MDBCM01
ALU01 (SH9)
CSR01* (SH 18)
MDB01
MDBCM00
ALU00 (SH9)
CSR00* (SH18)
MDB00
EXTW
STRBYTE
MAR00* (SH2)
STRBMAR
MAR00 (SH12)
CLKMDR (SH 16)
BED31I (SH12) M70-5
BED30I (SH12) M70-3
LOW TRUTH BUS
MDR07
MDR06
MDR05
MDR04
MDR03
MDR02
MDR01
MDR00
MA/MD07 (SH6) M41-14
MDØ7
MDR07ALU (SH6) M37-12
MA/MD06 (SH6) M41-11
MDØ6
MDR06ALU (SH6) M37-9
RIO 2 (SH 18) M132-10
MA/MD05 (SH6) M41-8
MDØ5
MDR05ALU (SH6) M37-5
MA/MD04 (SH6) M41-2
MDØ4
MDR04ALU (SH6) M37-2
RIO 1 (SH 18) M110-9
MDØ3/11 (SH5) M42-15
MDØ3
MD/ALB3 (SH8) M26-12
MDØ2
MD02/10 (SH5) M42-10
MD/ALB2 (SH5) M26-9
TCD30 (SH15) M5-2
NGIN (SH19) M74-6
MDØ1
MD01/09 (SH5) M42-6
TCD12 (SH15) M7-9
MD/ALB1 (SH5) M26-5
TCD11 (SH15) M7-4
EQIN (SH19) M74-10
MDØØ
MD00/08 (SH5) M42-3
TCD10 (SH15) M7-5
MD/ALB0 (SH5) M26-2
TCD12 (SH15) M7-10
COIN (SH19) M74-3
B9B (SH7) M21-12
MDR13 (SH4)
MDR14 (SH4)
MDR13 (SH4)
MDR12 (SH4)
M36-9
MDRØ8 (SH4)
MDRØ9 (SH4)
MDR10 (SH4)
MDR11 (SH4)
M38-9
32K DATA FLOW
MDR00-07 LOGIC
SH 3


Low TRUTH BUSS
MDB15
MDB14
MDB13
MDB12
MDB11
MDB10
MDB09
MDB08
MDR15 74175
MDR14 74175
MDR13 74175
MDR12 74175
MDR11 74175
MDR10 74175
MDR09 74175
MDR08 74175
IR15(SH12) M86-13
IR14(SH12) M86-12
IR13(SH12) M86-5
IR12(SH12) M86-4
IR11(SH12) M88-13
IR10(SH12) M88-12
IR09(SH12) M88-5
IR08(SH12) M88-4
(SH10) ALU15
(SH9) ALU06
(SH9) ALU05
ALU04
ALU03 (SH9)
ALU02 (SH9)
ALU01 (SH9)
ALU00 (SH9)
MDBCM15
MDBCM14
MDBCM13
MDBCM12
MDBCM11
MDBCM10
MDBCM09
MDBCM08
BE1/0 (SH8)
ALU07 (SH9)
ALU14 (SH10)
ALU13 (SH10)
ALU12 (SH9)
ALU11 (SH10)
ALU10 (SH10)
ALU09 (SH10)
ALU08 (SH10)
ALBMD15 (SH6) M20-12
MA/MD15 (SH8) M3-14
ALBMD14 (SH6) M20-9
MA/MD14 (SH8) M3-2
ALBMD13 (SH6) M20-5
MA/MD13 (SH8) M3-5
TCD30(SH12) M5-3
ALBMD12 (SH6) M20-2
MA/MD12 (SH8) M3-11
MA/MD11 (SH7) M6-11
MD03/11 (SH5) M42-14
MA/MD10 (SH7) M6-11
MD02/10 (SH5) M42-11
B1ØB (SH7) M8-4
MD09 (SH7) M8-1
MA/MD09 (SH7) M6-5
MD01/09 (SH5) M42-5
TCD13(SH15) M22-5
B9B(SH7) M21-10
MD/ALBOB (SH7) M40-9
MD00/08 (SH5) M42-2
TCD14(SH15) M22-2
EVMDRCLK (SH3)
ALU/MDBL (SH3) M75-9
ALUMDR(SH2) M75-10
CON/MDB(SH6)
MDRA
MDRB
MDRC
R11
R12
MD15
MD13
MD12
MD11
MD10
MD09
MD08
MD/ALBOB
MD14
MD00
B1ØB
B9B
B98
B99
B9A
B9C
B9D
B9E
B9F
B9G
B9H
B9J
B9K
B9L
B9M
B9N
B9P
B9R
B9S
B9T
B9U
B9V
B9W
B9X
B9Y
B9Z
B9AA
B9AB
B9AC
B9AD
B9AE
B9AF
B9AG
B9AH
B9AJ
B9AK
B9AL
B9AM
B9AN
B9AP
B9AR
B9AS
B9AT
B9AU
B9AV
B9AW
B9AX
B9AY
B9AZ
B9BA
B9BB
B9BC
B9BD
B9BE
B9BF
B9BG
B9BH
B9BJ
B9BK
B9BL
B9BM
B9BN
B9BP
B9BR
B9BS
B9BT
B9BU
B9BV
B9BW
B9BX
B9BY
B9BZ
B9CA
B9CB
B9CC
B9CD
B9CE
B9CF
B9CG
B9CH
B9CJ
B9CK
B9CL
B9CM
B9CN
B9CP
B9CR
B9CS
B9CT
B9CU
B9CV
B9CW
B9CX
B9CY
B9CZ
B9DA
B9DB
B9DC
B9DD
B9DE
B9DF
B9DG
B9DH
B9DJ
B9DK
B9DL
B9DM
B9DN
B9DP
B9DR
B9DS
B9DT
B9DU
B9DV
B9DW
B9DX
B9DY
B9DZ
B9EA
B9EB
B9EC
B9ED
B9EE
B9EF
B9EG
B9EH
B9EJ
B9EK
B9EL
B9EM
B9EN
B9EP
B9ER
B9ES
B9ET
B9EU
B9EV
B9EW
B9EX
B9EY
B9EZ
B9FA
B9FB
B9FC
B9FD
B9FE
B9FF
B9FG
B9FH
B9FJ
B9FK
B9FL
B9FM
B9FN
B9FP
B9FR
B9FS
B9FT
B9FU
B9FV
B9FW
B9FX
B9FY
B9FZ
B9GA
B9GB
B9GC
B9GD
B9GE
B9GF
B9GG
B9GH
B9GJ
B9GK
B9GL
B9GM
B9GN
B9GP
B9GR
B9GS
B9GT
B9GU
B9GV
B9GW
B9GX
B9GY
B9GZ
B9HA
B9HB
B9HC
B9HD
B9HE
B9HF
B9HG
B9HH
B9HJ
B9HK
B9HL
B9HM
B9HN
B9HP
B9HR
B9HS
B9HT
B9HU
B9HV
B9HW
B9HX
B9HY
B9HZ
B9JA
B9JB
B9JC
B9JD
B9JE
B9JF
B9JG
B9JH
B9JJ
B9JK
B9JL
B9JM
B9JN
B9JP
B9JR
B9JS
B9JT
B9JU
B9JV
B9JW
B9JX
B9JY
B9JZ
B9KA
B9KB
B9KC
B9KD
B9KE
B9KF
B9KG
B9KH
B9KJ
B9KK
B9KL
B9KM
B9KN
B9KP
B9KR
B9KS
B9KT
B9KU
B9KV
B9KW
B9KX
B9KY
B9KZ
B9LA
B9LB
B9LC
B9LD
B9LE
B9LF
B9LG
B9LH
B9LJ
B9LK
B9LL
B9LM
B9LN
B9LP
B9LR
B9LS
B9LT
B9LU
B9LV
B9LW
B9LX
B9LY
B9LZ
B9MA
B9MB
B9MC
B9MD
B9ME
B9MF
B9MG
B9MH
B9MJ
B9MK
B9ML
B9MM
B9MN
B9MP
B9MR
B9MS
B9MT
B9MU
B9MV
B9MW
B9MX
B9MY
B9MZ
B9NA
B9NB
B9NC
B9ND
B9NE
B9NF
B9NG
B9NH
B9NJ
B9NK
B9NL
B9NM
B9NN
B9NP
B9NR
B9NS
B9NT
B9NU
B9NV
B9NW
B9NX
B9NY
B9NZ
B9PA
B9PB
B9PC
B9PD
B9PE
B9PF
B9PG
B9PH
B9PJ
B9PK
B9PL
B9PM
B9PN
B9PP
B9PR
B9PS
B9PT
B9PU
B9PV
B9PW
B9PX
B9PY
B9PZ
B9QA
B9QB
B9QC
B9QD
B9QE
B9QF
B9QG
B9QH
B9QJ
B9QK
B9QL
B9QM
B9QN
B9QP
B9QR
B9QS
B9QT
B9QU
B9QV
B9QW
B9QX
B9QY
B9QZ
B9RA
B9RB
B9RC
B9RD
B9RE
B9RF
B9RG
B9RH
B9RJ
B9RK
B9RL
B9RM
B9RN
B9RP
B9RR
B9RS
B9RT
B9RU
B9RV
B9RW
B9RX
B9RY
B9RZ
B9SA
B9SB
B9SC
B9SD
B9SE
B9SF
B9SG
B9SH
B9SJ
B9SK
B9SL
B9SM
B9SN
B9SP
B9SR
B9SS
B9ST
B9SU
B9SV
B9SW
B9SX
B9SY
B9SZ
B9TA
B9TB
B9TC
B9TD
B9TE
B9TF
B9TG
B9TH
B9TJ
B9TK
B9TL
B9TM
B9TN
B9TP
B9TR
B9TS
B9TT
B9TU
B9TV
B9TW
B9TX
B9TY
B9TZ
B9UA
B9UB
B9UC
B9UD
B9UE
B9UF
B9UG
B9UH
B9UJ
B9UK
B9UL
B9UM
B9UN
B9UP
B9UR
B9US
B9UT
B9UU
B9UV
B9UW
B9UX
B9UY
B9UZ
B9VA
B9VB
B9VC
B9VD
B9VE
B9VF
B9VG
B9VH
B9VJ
B9VK
B9VL
B9VM
B9VN
B9VP
B9VR
B9VS
B9VT
B9VU
B9VV
B9VW
B9VX
B9VY
B9VZ
B9WA
B9WB
B9WC
B9WD
B9WE
B9WF
B9WG
B9WH
B9WJ
B9WK
B9WL
B9WM
B9WN
B9WP
B9WR
B9WS
B9WT
B9WU
B9WV
B9WW
B9WX
B9WY
B9WZ
B9XA
B9XB
B9XC
B9XD
B9XE
B9XF
B9XG
B9XH
B9XJ
B9XK
B9XL
B9XM
B9XN
B9XP
B9XR
B9XS
B9XT
B9XU
B9XV
B9XW
B9XX
B9XY
B9XZ
B9YA
B9YB
B9YC
B9YD
B9YE
B9YF
B9YG
B9YH
B9YJ
B9YK
B9YL
B9YM
B9YN
B9YP
B9YR
B9YS
B9YT
B9YU
B9YV
B9YW
B9YX
B9YY
B9YZ
B9ZA
B9ZB
B9ZC
B9ZD
B9ZE
B9ZF
B9ZG
B9ZH
B9ZJ
B9ZK
B9ZL
B9ZM
B9ZN
B9ZP
B9ZR
B9ZS
B9ZT
B9ZU
B9ZV
B9ZW
B9ZX
B9ZY
B9ZZ

(LOW TRUTH RUSS)

ALB03

ALB02

ALB01

ALB00

A34

A35

A43

A06

ALU3A3 (SH9) M127-19

ALU2A2 (SH9) M127-20

ALU1A1 (SH9) M127-21

ALU0A0 (SH9) M127-22

M108-14 B3 (SH9)

M108-13 MD/IR2 (SH9)

M108-5 MD/IR1 (SH9)

M108-2 B0 (SH9)

M109-5 PERR (SH2)

M26-11 MD/ALB3 (SH5)

M109-4 PERR (SH2)

M26-8 MD/ALB2 (SH5)

M109-3 PERR (SH2)

M26-6 MD/ALB1 (SH5)

MD/ALB0 (SH5) M26-3

MDR/ALU (SH15) M26-1

745257

M42

M10

MD03/11

MA/AC03

MD02/10

MA/AC02

MD01/09

MA/AC01

MD00/08

MA/AC00

ACR03 (SH11)

MDR11 (SH4)

BED13 (SH5)

MDR03 (SH3)

MAR03 (SH2)

MDR10 (SH4)

MDR02 (SH3)

MAR02 (SH2)

ACR02 (SH11)

MDR01 (SH3)

MAR01 (SH2)

ACR01 (SH11)

MDR00 (SH3) L⇒ MAR00

ACR00 (SH11) L⇒ ACR00

AC00/04
AC01/05
AC02/06
AC03/07
ACOC
M25-1 SH6 M9-5

M132 ACRSL 7410

SHIL (SH4) ACR/MDD

DSPACR (SH11)

MAR/ALB (SH16) M43-11

MREN (SH10) M11-1

M78 MAR/ALB1 7402

TURMLT (SH4)

A10 MAR/ALB1

MA/AC00 7402 M-1

MA/AA31 (SH16)

MDR00 (SH3)

MDR01 (SH3)

MDR02 (SH3)

MDENL (SH16)

MDR03 (SH3)

MD/ALB0 DM8094

MD/ALB1 DM8094

MD/ALB2 DM8094

MD/ALB3 DM8094

ALB00 (SH5)

ALB01 (SH5)

ALB02 (SH5)

ALB03 (SH5)

32K DATA FLOW

ALB00-03 LOGIC

REV E 4/74

SH 5

ALU7 $\overline{A3}$ (SH9) M126-19

ALU6 $\overline{A2}$ (M126-21 SH9)

ALU5 $\overline{A1}$ (M126-23 SH9)

ALU4 $\overline{A0}$ (M126-2 SH9)

A24 A25 A23 A09

ALB07 ALB06 ALB05 ALB04

AC03/07 AC02/05 AC00/04

$\overline{B7}$ (SH9) M107-14 $\overline{B6}$ (SH9) M107-11 $\overline{B5}$ (SH9) M107-5 $\overline{B4}$ (SH9) M107-2

ACR03 (SH11) ACR02 (SH11) ACR01 (SH11) ACR00 (SH11) ACR04 (SH11)

ACR/ALB M64-4 (SH9)

IO/SLA (SH11) ACRALBI

ACR/ARB

ACR/ALB

TURTAI (SH5)

7400 ACRALB M29

7400 ACRALBI M28

7400 M37

7400 M20

7400 M14

7400 M23

7400 M41

7400 M25

7400 M141

7400 M135

7400 ACOC

7400 M1

7400 M4

7400 M2

7400 M3

7400 M9

7400 M7

7400 M6

7400 M5

7400 M8

7400 M10

7400 M11

7400 M12

7400 M13

7400 M15

7400 M16

7400 M17

7400 M18

7400 M19

7400 M21

7400 M22

7400 M24

7400 M26

7400 M27

7400 M30

7400 M31

7400 M32

7400 M33

7400 M34

7400 M35

7400 M36

7400 M38

7400 M39

7400 M40

7400 M42

7400 M43

7400 M44

7400 M45

7400 M46

7400 M47

7400 M48

7400 M49

7400 M50

7400 M51

7400 M52

7400 M53

7400 M54

7400 M55

7400 M56

7400 M57

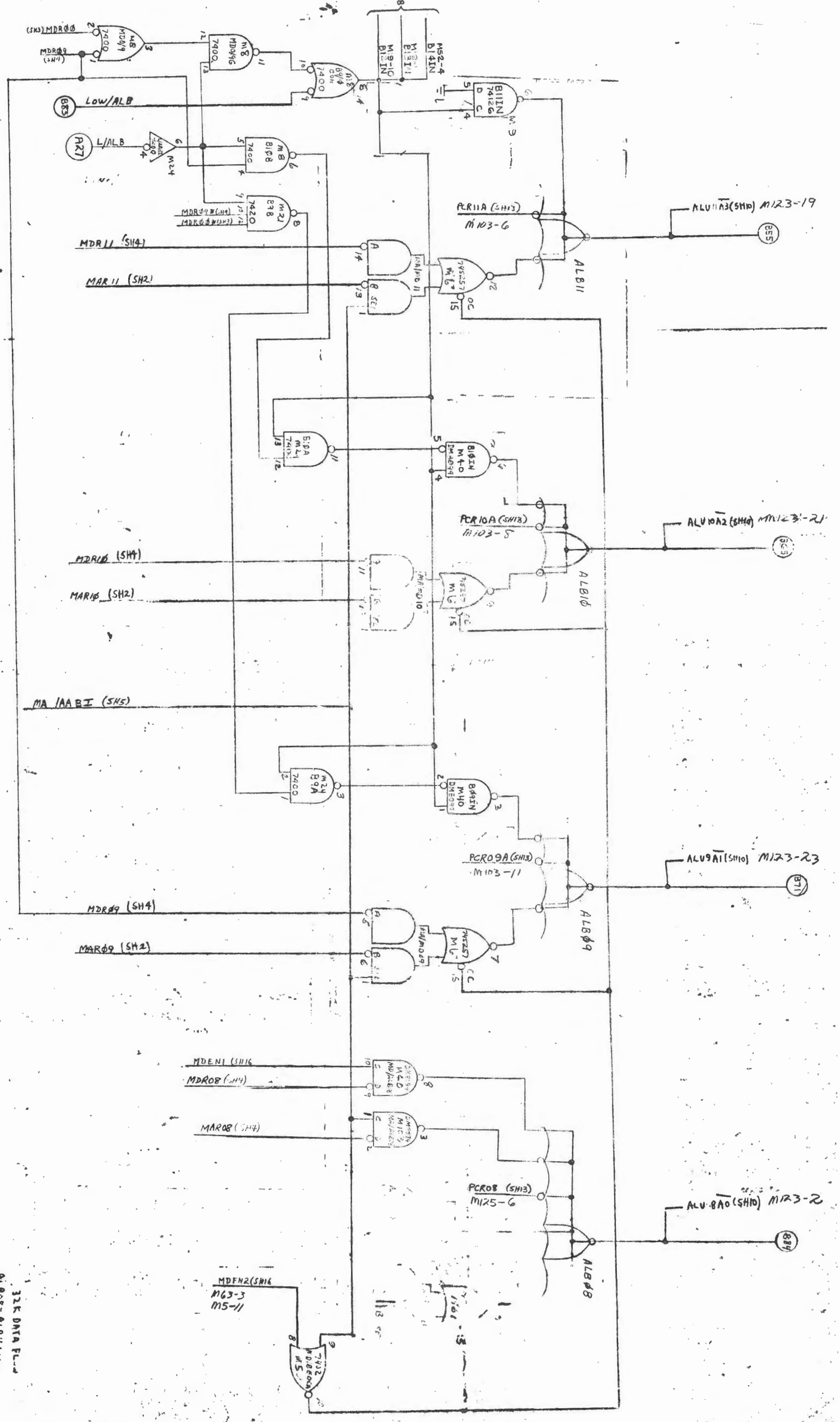
7400 M58

7400 M59

7400 M60

7400 M61

7400


SHB
MS2-4 B14IN
M9-10 B13IN
M8 B12IN
(SH3) MDR00
MDR09 (SH4)
M8 MD0/9 7400
M8 MD9/16 7400
M8 B/Ø com 7400
B11IN 74126
M3
B85
LOW/ALB
A27
L/ALB
M24
M8 B08 7400
M2J B38 7420
MDR09* (SH4)
MDR00* (SH3)
MDR11 (SH4)
MAR11 (SH2)
M16
ALB11
PCR11A (SH13)
M103-6
ALU11Ā3 (SH10) M123-19
B55
M4 B1Ø 74126
PCR10A (SH13)
M103-5
ALU10A2 (SH10) M123-21
B53
MDRIØ (SH4)
MARIØ (SH2)
M6
ALBIØ
MA IAABI (SH5)
M24 B9A 7400
B49IN M40 DM8098
PCR09A (SH13)
M103-11
ALU9Ā1 (SH10) M123-23
B71
MDR09 (SH4)
MAR09 (SH2)
M6
ALB09
MDEN1 (SH16
MDR08 (SH4)
MAR08 (SH4)
M40 MD/B8
M16 MA/B8
PCR08 (SH13)
M125-6
ALU-8A0 (SH10) M123-2
B48
ALB08
MDEN2 (SH16
M63-3
M5-11
M5 MD B8 74H52
32K DATA FLOW
ALB08-ALB15L
SHT
SHEET
DEC-10-CP-0-7

ALU12 $\overline{R0}$(SH10) M121-2

B22

ALU13 $\overline{N}$ (SH9) M121-23

B20

ALU14 $\overline{R1}$(SH10) M121-21

B18

ALU15 $\overline{A3}$ (SH10) M121-19

B16

ALB12

ALB13

ALB14

ALB15

B12IN 74126 M19

B9/10 CON (SH7)

PCR12A (SH13) M117-11

M3 74S257

MA/MD12

B13IN 74126 M19

B9/10 CON (SH7)

PCR13A (SH13) M117-8

M5 74S257

B14IN 74126 M52

B9/10 CON (SH7)

PCR14A (SH13) M117-6

MA/MD14

PCR15A (SH13) M117-3

MA/MD15

MDR12 (SH4)

MAR12 (SH2)

MDEN2 (SH16)

MDR13 (SH4)

MAR13 (SH2)

MDR14 (SH4)

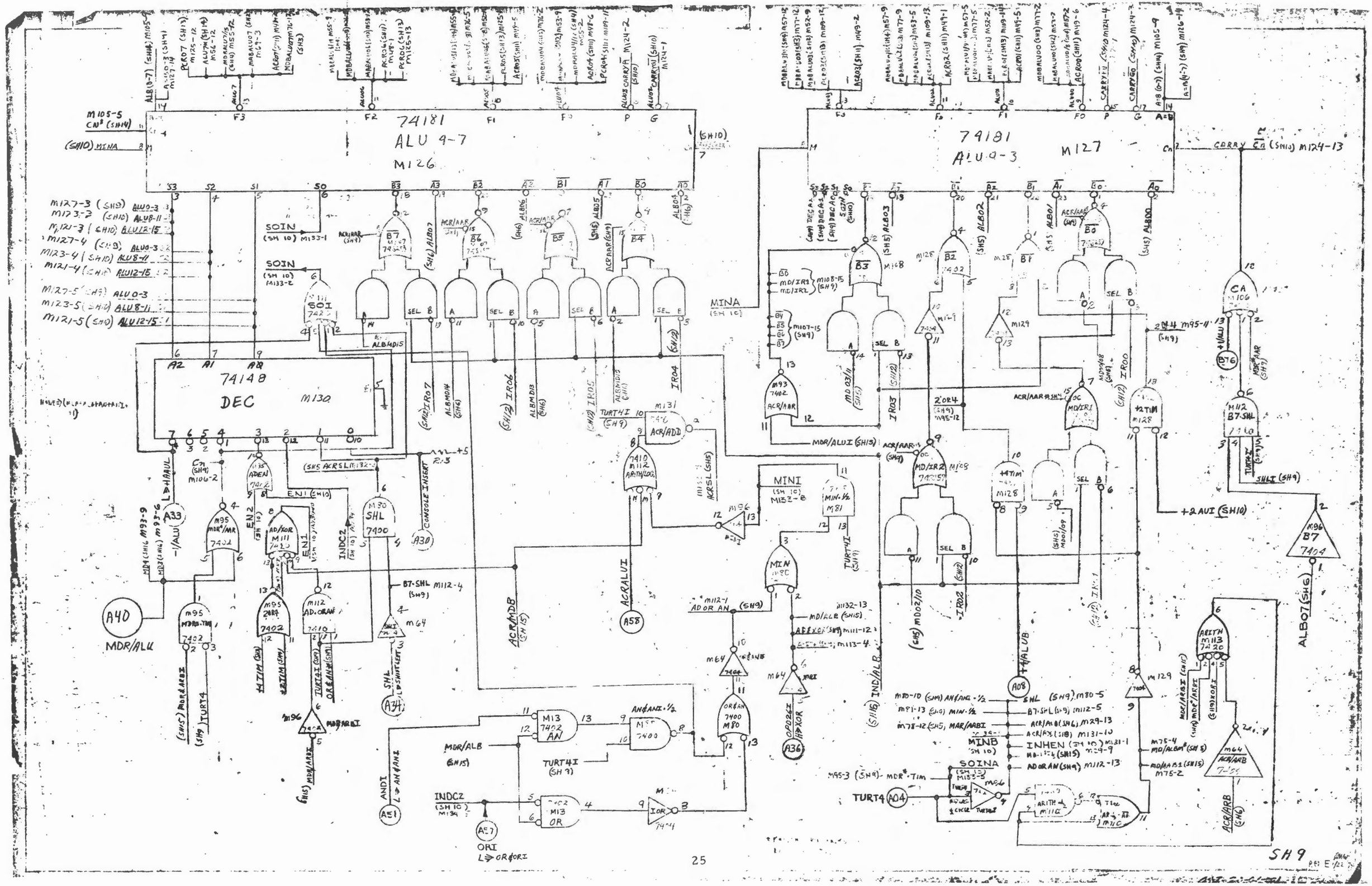
MAR14 (SH2)

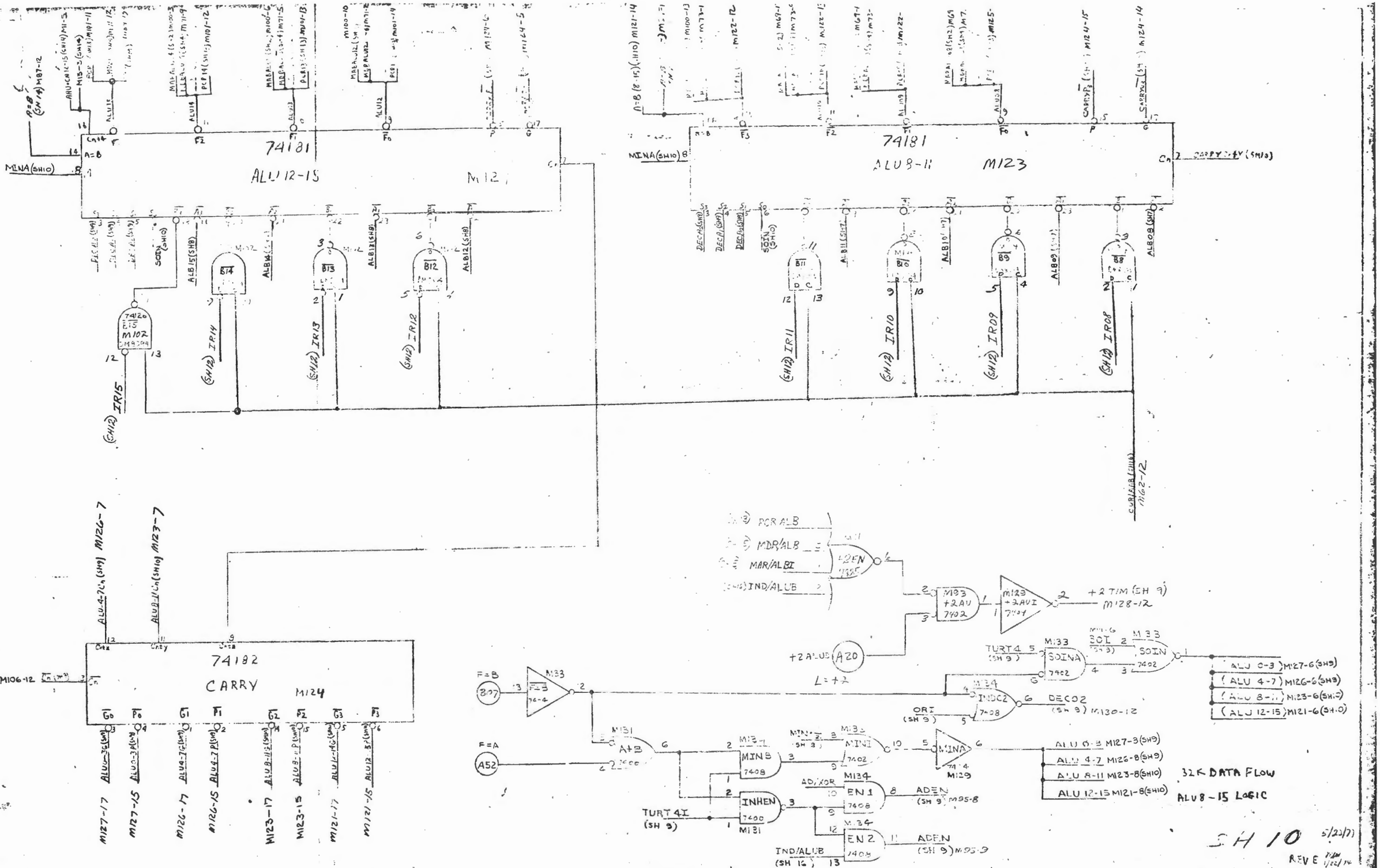
MDR15 (SH4)

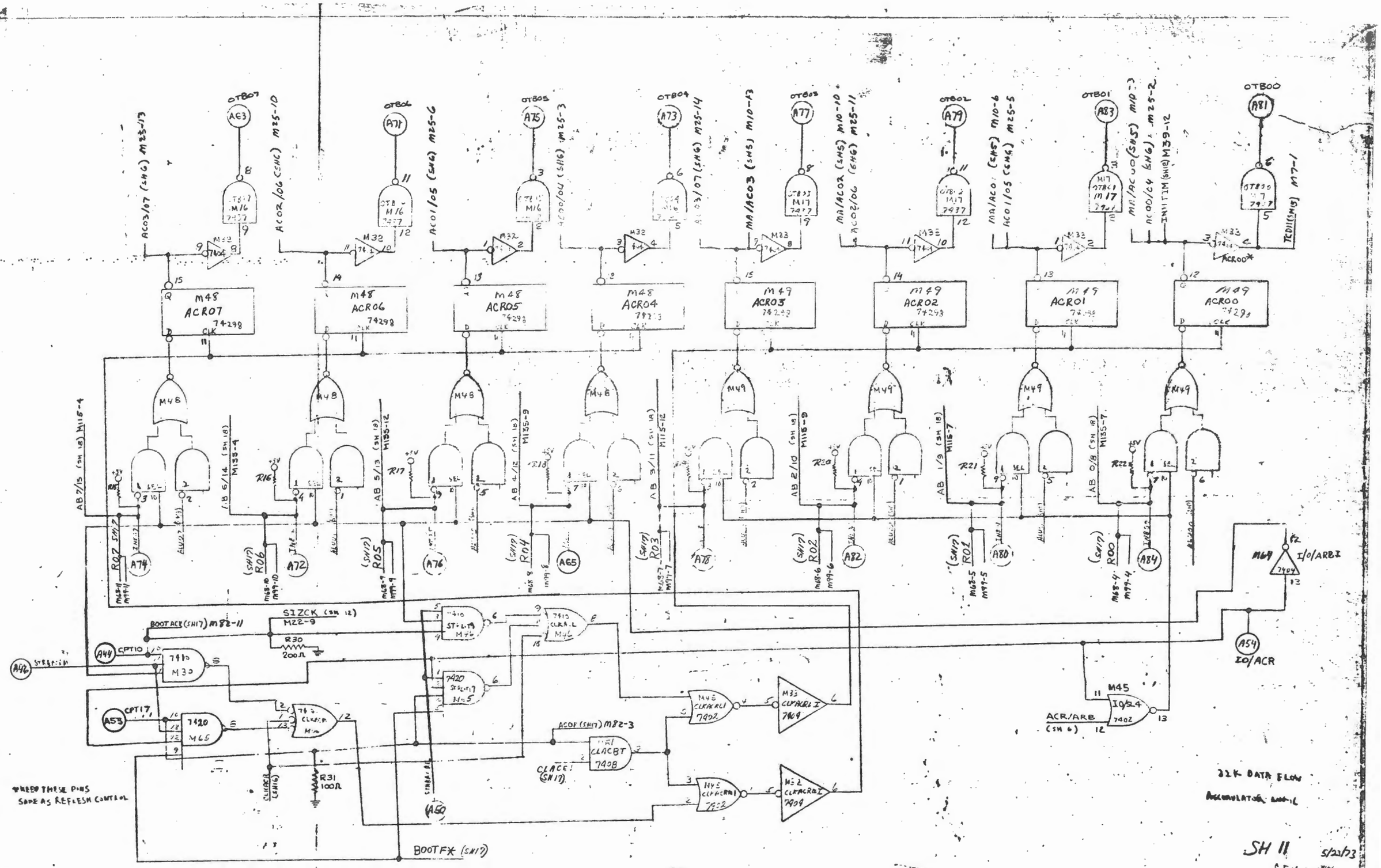
MAR15 (SH4)

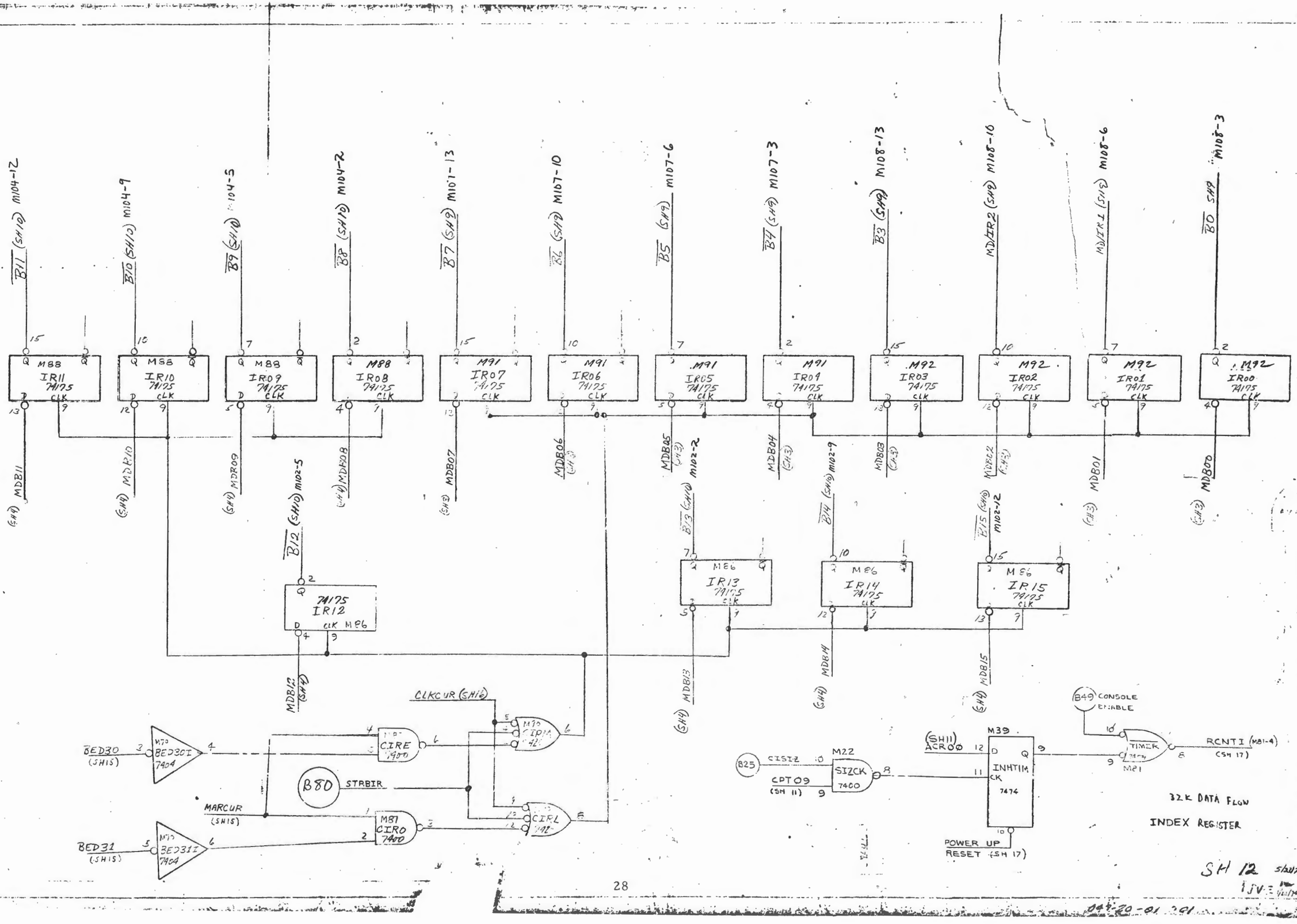
32K DATA FLOW
ALB12-ALB15 LOGIC

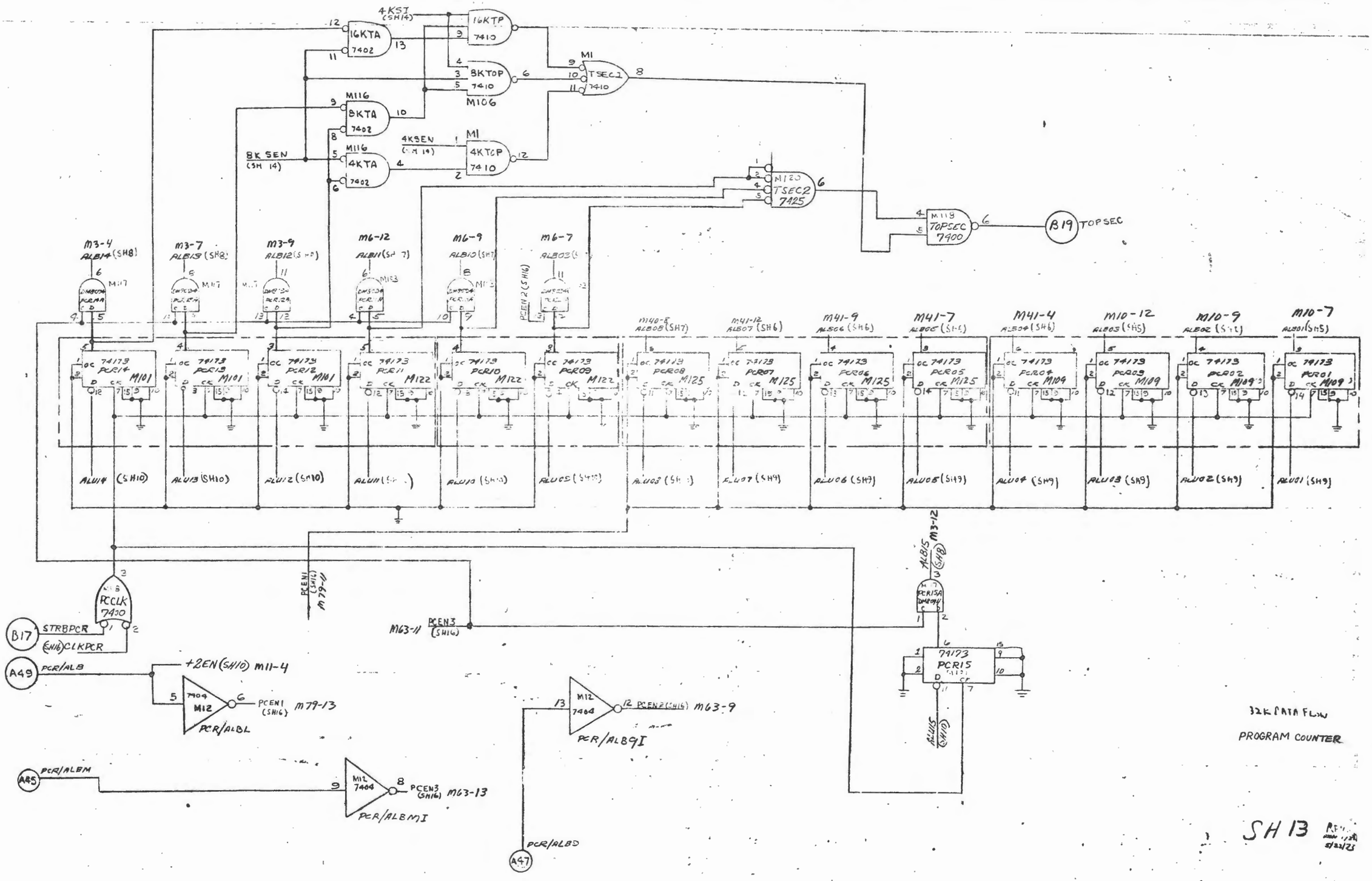
SH 8
REV E 7/22/74

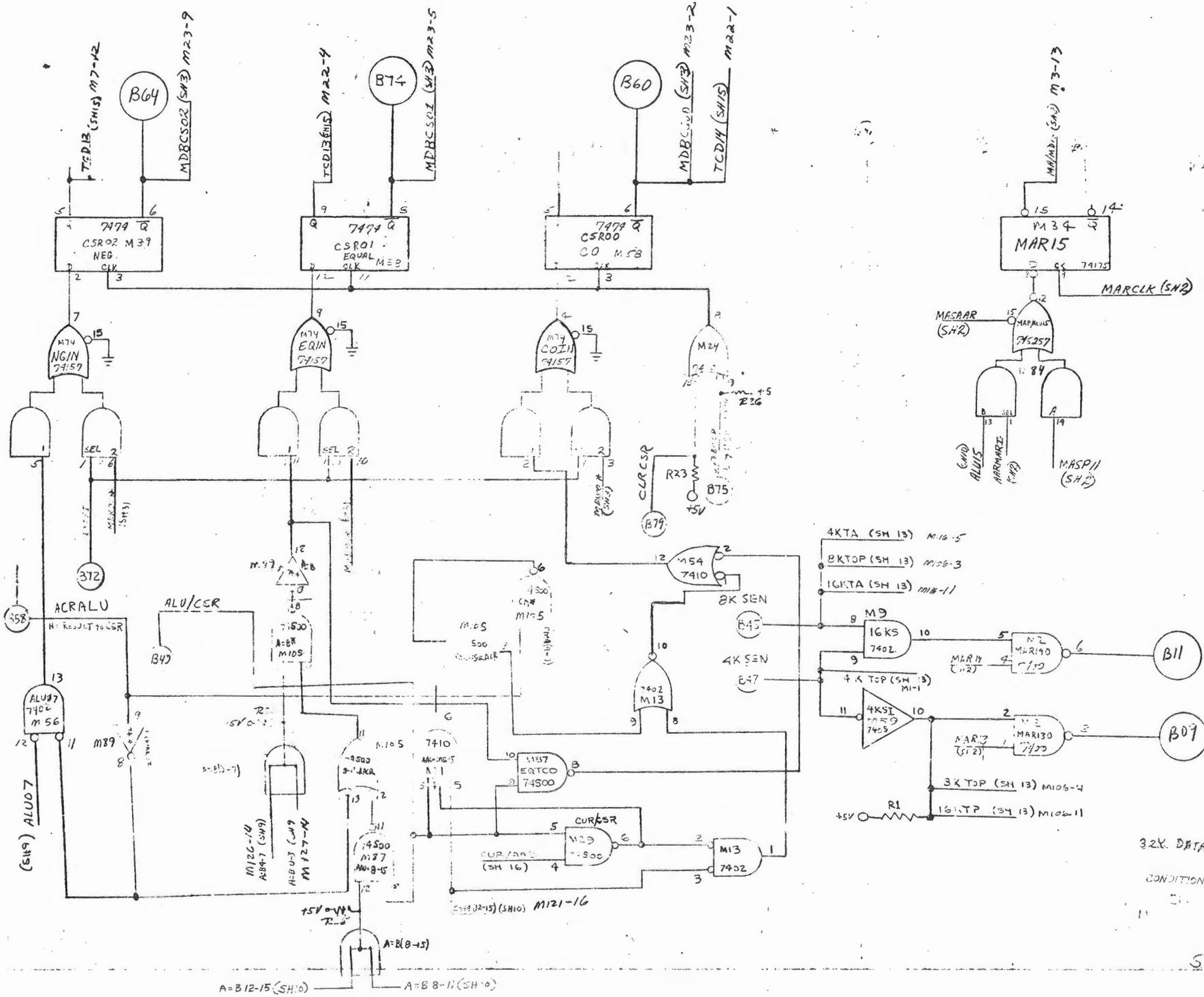

74181
ALU 4-7
M126
74181
ALU 0-3
M127
74148
DEC
M130
MINA
(SH 10)
SOIN
(SH 10) M133-1
SOI
M111
ALB/ADIS
ACR/ADD
M131
ADEN
M112
ADXOR
M111
SHL
M30
7400
MDR/ALU
A40
A33
A30
A58
A34
A57
A51
A36
A08
A04
MINB
(SH 10)
SOINA
(SH 10) M133-5
INDC2
(SH 10) M134
MDR/ALB
(SH15)
TURT4I
(SH 9)
ACRALUI
ACR/ADB
(SH 15)
MINI
(SH 10) M133-6
MIN
M080
MD/IR2
74S157
M128
MD/IR1
M129
ACR/AAR
(SH9)
CARRY Cn (SH10) M124-13
CA
M106
ARITH
M113
74S20
ALB07(SH6)
SH 9

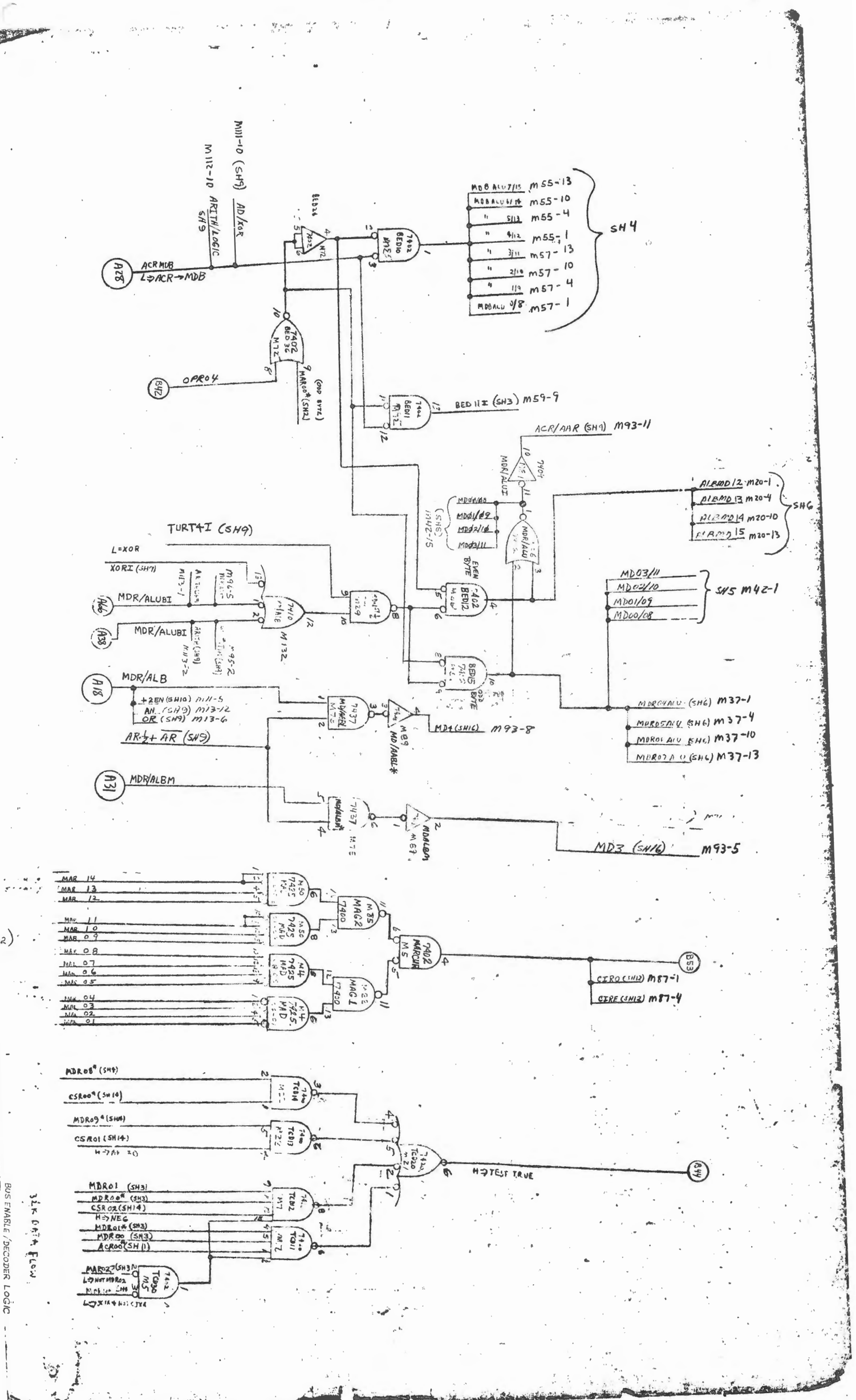

74181
ALU 12-15
M127
74181
ALU 8-11
M123
74182
CARRY
M124
MINA(SH10)
SOIN (SH10)
DECA(SH9)
DECB(SH9)
ALB15(SH8)
ALB14(SH8)
ALB13(SH8)
ALB12(SH8)
ALB11(SH7)
ALB10(SH7)
ALB09(SH7)
ALB08(SH7)
(SH12) IR15
(SH12) IR14
(SH12) IR13
(SH12) IR12
(SH12) IR11
(SH12) IR10
(SH12) IR09
(SH12) IR08
M102
M104
M105
M106
M107
M108
M109
M110
M111
M112
M113
M114
M115
M116
M117
M118
M119
M120
M121
M122
M123
M124
M125
M126
M127
M128
M129
M130
M131
M132
M133
M134
M135
M136
M137
M138
M139
M140
M141
M142
M143

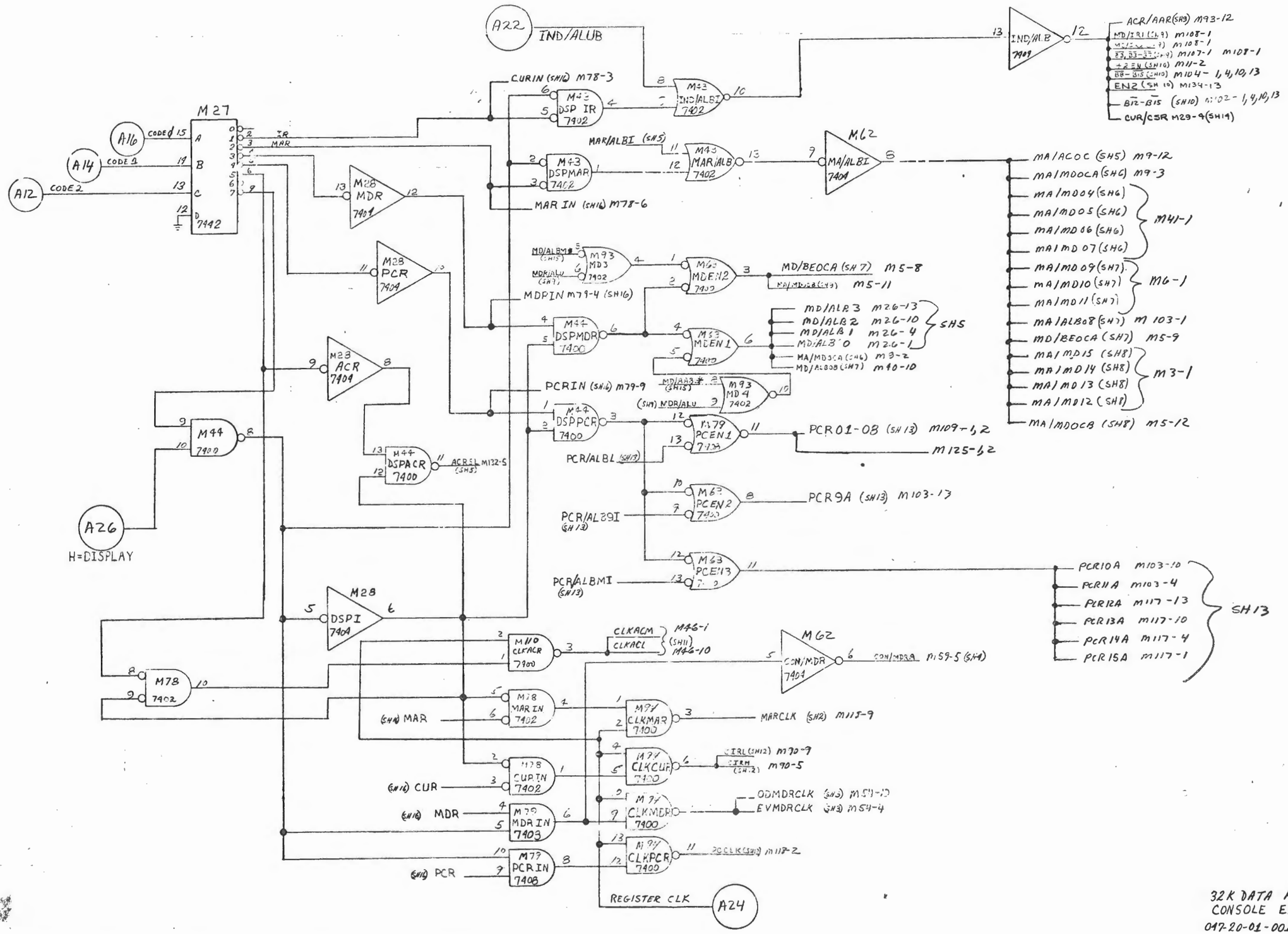

ACR03/07 (SH6) M25-13
ACR02/06 (SH6) M25-10
ACR01/05 (SH6) M25-6
ACR00/04 (SH6) M25-3
MA/ACR03 (SH5) M10-13
MA/ACR02 (SH5) M10-10
MA/ACR01 (SH5) M10-6
MA/ACR00 (SH5) M10-3
INHIITIM (SH12) M39-12
TEDII (SH5) M17-1
OTB07
OTB06
OTB05
OTB04
OTB03
OTB02
OTB01
OTB00
M48 ACR07 74298
M48 ACR06 74298
M48 ACR05 74298
M48 ACR04 74298
M49 ACR03 74298
M49 ACR02 74298
M49 ACR01 74298
M49 ACR00 74298
ACR00*
AB 7/15 (SH 18) M116-4
AB 6/14 (SH 18) M135-9
AB 5/13 (SH 18) M135-12
AB 4/12 (SH 18) M135-9
AB 3/11 (SH 18) M115-12
AB 2/10 (SH 18) M116-9
AB 1/9 (SH 18) M116-7
AB 0/8 (SH 18) M135-7
R07 (SH17)
R06 (SH17)
R05 (SH17)
R04 (SH17)
R03 (SH17)
R02 (SH17)
R01 (SH17)
R00 (SH17)
M69 I/O/ARBI
I/O/ACR
ACR/ARB (SH 6)
BOOT ACK (SH17) M82-11
SIZCK (SH 12) M22-9
R30 200Ω
CPT10
CPT17
STBREQH
ACOF (SH17) M82-3
CLACE! (SH17)
CLKDCR (SH16)
R31 100Ω
STBREQ BL
BOOTF* (SH17)
THESE PINS SAME AS REFRESH CONTROL
22K DATA FLOW
ACCUMULATOR CONTROL
SH 11
5/23/73
REVISED 7/21/73


B11 (SH10) M104-12
B10 (SH10) M104-9
B9 (SH10) M104-5
B8 (SH10) M104-2
B7 (SH9) M101-13
B6 (SH9) M107-10
B5 (SH9) M107-6
B4 (SH9) M107-3
B3 (SH9) M108-13
MDIR2 (SH9) M108-10
MDIR1 (SH8) M108-6
B0 SH9 M108-3
M88 IR11 74175 CLK
M88 IR10 74175 CLK
M88 IR09 74175 CLK
M88 IR08 74175 CLK
M91 IR07 74175 CLK
M91 IR06 74175 CLK
M91 IR05 74175 CLK
M91 IR04 74175 CLK
M92 IR03 74175 CLK
M92 IR02 74175 CLK
M92 IR01 74175 CLK
M92 IR00 74175 CLK
MDB11 (SH4)
MDR10 (SH4)
MDR09 (SH4)
MDR08 (SH4)
MDB07 (SH3)
MDB06 (SH3)
MDB05 (SH3)
MDB04 (SH3)
MDB03 (SH3)
MIXR02 (SH3)
MDB01 (SH3)
MDB00 (SH3)
B12 (SH10) M102-5
B13 (SH9) M102-9
B14 (SH9) M102-12
B15 (SH9) M102-12
74175 IR12 D CLK M86
M86 IR13 74175 CLK
M86 IR14 74175 CLK
M86 IR15 74175 CLK
MDB12 (SH4)
MDB13 (SH4)
MDB14 (SH4)
MDB15 (SH4)
CLKCUR (SH16)
BED30 (SH15)
BED31 (SH15)
M70 BED30I 7404
M70 BED31I 7404
B80 STRBIR
MARCUR (SH15)
M81 CIRE 7400
M81 CIRO 7400
M70 IRIM 7420
CIRL 7420
B25 CISIZ
CPT09 (SH 11)
M22 SIZCK 7400
(SH11) ACR00
M39 INHTIM CK 7474
POWER UP RESET (SH 17)
B49 CONSOLE ENABLE
TIMER M21
RCNTI (M81-4) (SH 17)
32K DATA FLOW
INDEX REGISTER
SH 12 SHEETS


4KSI (SH14)
16KTA 7402
16KTP 7410
8KTA 7402
8KTOP 7410
M106
M116
M1
TSEC1 7410
8K SEN (SH 14)
4KSEN (SH 14)
4KTA 7402
4KTOP 7410
M120
TSEC2 7425
M118
TOPSEC 7400
B19 TOPSEC
M3-4 ALB14 (SH8)
M3-7 ALB13 (SH8)
M3-9 ALB12 (SH8)
M6-12 ALB11 (SH7)
M6-9 ALB10 (SH7)
M6-7 ALB09 (SH6)
M8-5 ALB08 (SH7)
M41-12 ALB07 (SH6)
M41-9 ALB06 (SH6)
M41-7 ALB05 (SH6)
M41-4 ALB04 (SH6)
M10-12 ALB03 (SH5)
M10-9 ALB02 (SH5)
M10-7 ALB01 (SH5)
74173 PCR14 M101
74173 PCR13 M101
74173 PCR12 M101
74173 PCR11 M122
74173 PCR10 M122
74173 PCR09 M122
74173 PCR08 M125
74173 PCR07 M125
74173 PCR06 M125
74173 PCR05 M125
74173 PCR04 M109
74173 PCR03 M109
74173 PCR02 M109
74173 PCR01 M109
ALU14 (SH10)
ALU13 (SH10)
ALU12 (SH10)
ALU11 (SH10)
ALU10 (SH10)
ALU09 (SH10)
ALU08 (SH9)
ALU07 (SH9)
ALU06 (SH9)
ALU05 (SH9)
ALU04 (SH9)
ALU03 (SH9)
ALU02 (SH9)
ALU01 (SH9)
PCCLK 7430
B17 STRBPCR
(ENB)CLKPCR
A49 PCR/ALB
+2EN (SH10) M11-4
7404 M12
PCEN1 (SH16) M79-13
PCR/ALBL
A45 PCR/ALBM
PCEN3 (SH16) M63-13
PCR/ALBMI
PCEN1 (SH16) M79-11
M63-11 PCEN3 (SH16)
PCEN2 (SH16)
M63-12 ALB15 (SH8)
74173 PCR15
ALU15 (SH10)
M12 7404
12 PCEN2 (SH16) M63-9
PCR/ALBGI
PCR/ALBD
A47
32K DATA FLOW
PROGRAM COUNTER
SH 13


B64
B74
B60
7474 Q
CSR02 M39
NEG
CLK
7474 Q
CSR01
EQUAL
M58
CLK
7474 Q
CSR00
CO M58
CLK
M74
NGIN
74157
M74
EQIN
74157
M74
COIN
74157
M24
+5
R26
CLRCSR
R23
+5V
B75
B79
M54
7410
8K SEN
B45
4K SEN
B47
M9
16KS
7402
4KSI
M59
74S5
4K TOP (SH 13) M1-1
3K TOP (SH 13) M106-4
16K TP (SH 13) M106-11
R1
+5V
B11
MAR14
B07
MAR13
M34
MAR15
74175
MARCLK (SH2)
MESBAR
(SH2)
MARALUS
74S257
ALU15
MARMARZ
MASP11
(SH2)
4KTA (SH 13) M16-5
8KTOP (SH 13) M106-3
16KTA (SH 13) M16-11
M89
ALU07
7402
M56
ALU07
(SH9)
372
358
ACRALU
H= RESULT to CSR
ALU/CSR
B47
M89
M105
74S00
A=BR
M105
M105
500
M105
7410
M13
7402
M137
EQTCO
74S00
M137
74S00
CURCSR
M9
74S00
CUR/CSR
(SH 16)
M13
7402
M126-14
A=B 4-7 (SH9)
M127-14
A=B 0-3 (SH9)
A=B(8-15)
A=B 12-15 (SH10)
A=B 8-11 (SH10)
M121-16
MAR14
(SH2)
MAR13
(SH2)
32K. DATA FLOW
CONDITION STATUS REGISTER
S 414

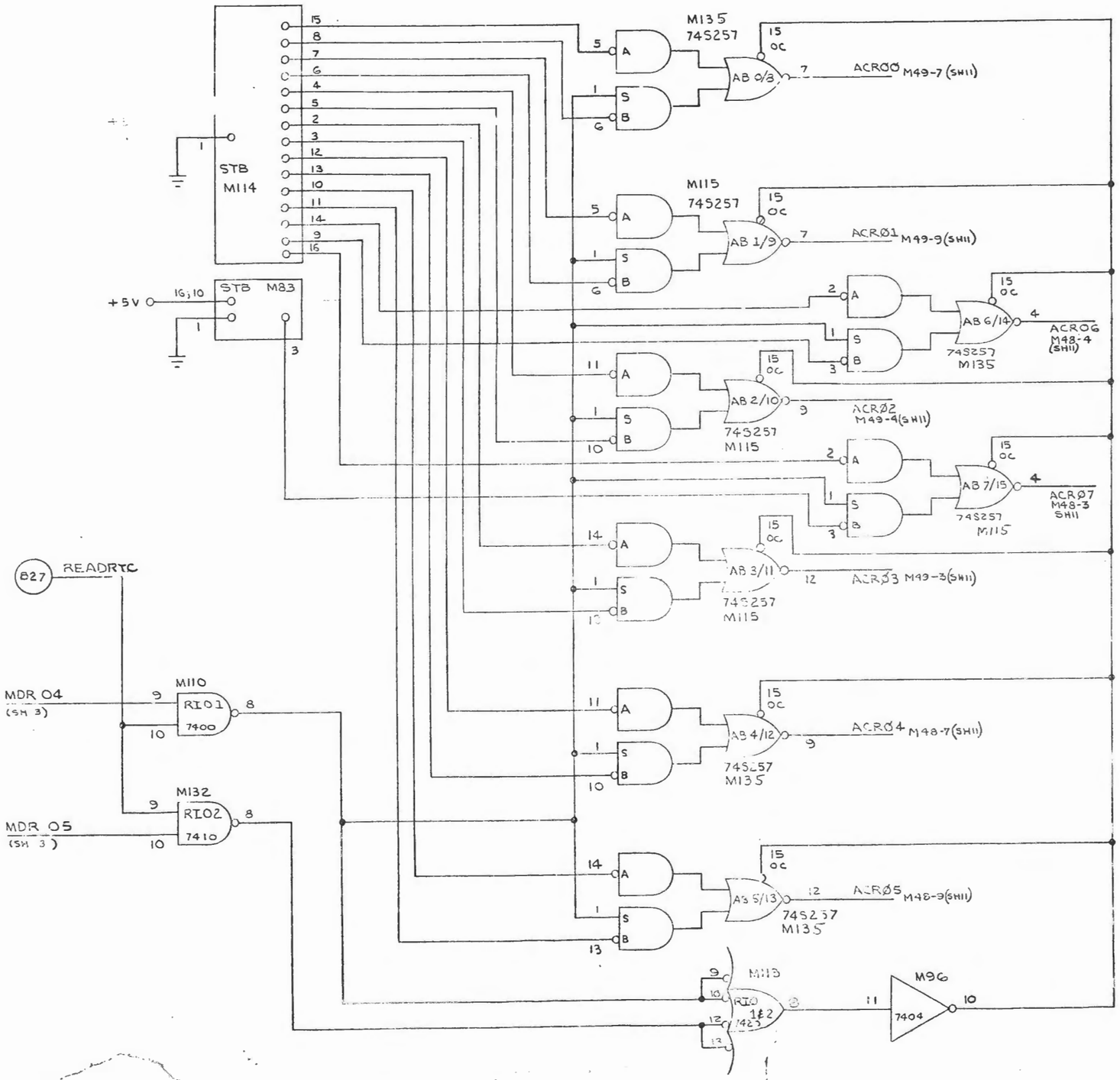

M111-10 (SH9) AD/XOR
M112-10 ARITH/LOGIC SH9
BED34
ACR MDB
L⇒ACR→MDB
A28
MDB ALU 7/15 M55-13
MDB ALU 6/14 M55-10
" 5/13 M55-4
" 4/12 M55-1
" 3/11 M57-13
" 2/10 M57-10
" 1/9 M57-4
MDB ALU 0/8 M57-1
SH4
7402 BED 3G M72
OPR04
A42
MAR00* (SH2) (END BYTE)
7404 BED1 M72
BED II I (SH3) M59-9
ACR/AAR (SH9) M93-11
7404 M72
MDR/ALUI
MDR04/12
MDR1/13
MDR2/14
MDR3/15
MDR/ALUI
M42-15 (SH5)
ALBMD12 m20-1
ALBMD13 m20-4
ALBMD14 m20-10
ALBMD15 m20-13
SH6
TURT4I (SH9)
L=XOR
XORI (SH7)
MDR/ALUBI
A46
A38
MDR/ALUBI
7410 M132
7402 BED2 M42
EVEN BYTE
MD03/11
MD02/10
MD01/09
MD00/08
SH5 M42-1
BED5 M42 ODD BYTE
A18
MDR/ALB
+2EN (SH10) M11-5
AN (SH9) M13-12
OR (SH9) M13-6
7437 M-ADDER M72
MD4 (SH16) M93-8
MD/ADBL*
AR-1 + AR (SH9)
MDR04ALU (SH6) M37-1
MDR05ALU (SH6) M37-4
MDR06ALU (SH6) M37-10
MDR07ALU (SH6) M37-13
A31
MDR/ALBM
7437 M72
MDALBM
MD3 (SH16) M93-5
MAR 14
MAR 13
MAR 12
MAR 11
MAR 10
MAR 09
MAR 08
MAR 07
MAR 06
MAR 05
MAR 04
MAR 03
MAR 02
MAR 01
7425 M50
7425 M56
7425 M44
7425 M44
7400 MAG2 M35
7400 MAG1 M33
7402 MARCUR M5
B53
CIRO (SH12) M87-1
CIRE (SH12) M87-4
MDR08* (SH9)
CSR00* (SH14)
MDR09* (SH9)
CSR01 (SH14)
H⇒TEST 20
7404 TC04 M72
7404 TC12 M72
7404 TC20 M72
H⇒TEST TRUE
A69
MDR01 (SH3)
MDR00* (SH3)
CSR02 (SH14)
H⇒NEG
MDR01* (SH3)
MDR00 (SH3)
ACR00 (SH1)
7404 TC02 M72
7404 TC11 M72
MAR22 (SH3)
L⇒NOT MDR02
H⇒NEG
L⇒XOR WITH CSR2
7402 TC00 M5
32K DATA FLOW
BUS ENABLE/DECODER LOGIC

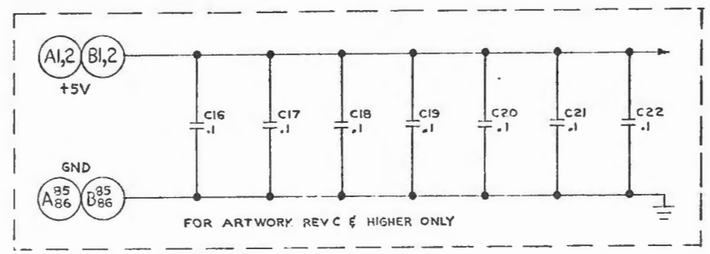


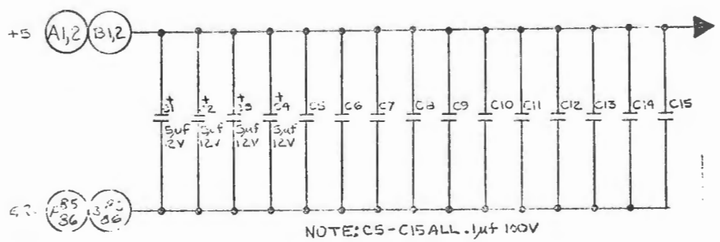
32K DATA FLOW
CONSOLE ENABLES
047-20-01-001 REV E 1/22/74
SH16

VPS
A62
A41
A42
+14V
R10 680Ω 1/4W 5% POWER UP RESET
R8 220Ω 1/4W 5%
M32 RCNT 7404
M31 ATCNT 7493
M15 7474 AUTO BOOT
S1 CW
+5V
1K R24
TIMER (SH 12)
M81 RCNTL 7408
INHTIM M39-10 (SH 12)
+5V
1K Ω R27 1/4W 5%
A61
BOOT SW.
M15 BSWF CK 7474
TIORST
A48
M14 RSBG 7403
M14 RSABF 7408
M30 BOOTF 7410
M30 BOOTF* 7410
STRL•T17 M65-5 M65-9 (SH11)
M29 SR1 74S00
M47 BOOT DM8094
A59
M81-2 CLACBT (SH11)
7476 CK CLACEN M97
M67 74163 RAR0-3
M98 74163 RAR4-7
M82 7474 ACOF
T17 (SH11)
M66 7476 CSF
M66 7476 RSBF
5203 MG8
5203 M99
ACR00 (SH11)
ACR01 (SH11)
ACR02 (SH11)
ACR03 (SH11)
ACR04 (SH11)
ACR05 (SH11)
ACR06 (SH11)
ACR07 (SH11)
RQ7 RQ6 RQ5 RQ4 RQ3 RQ2 RQ1 RQ0
+5V
BTWAIT
A60
L=BOOT WAIT
M82 BOOTACK CK 7474
(SH11) CPT09
ACK DM8094 M47
A64
-13V
A69
A70
330Ω R29
CR1 1N961B 10V
Q1 2N2905
STB B3
+5V

32K DATA FLOW
REVISED ON 4/24/78
SH17
047-20-01-001







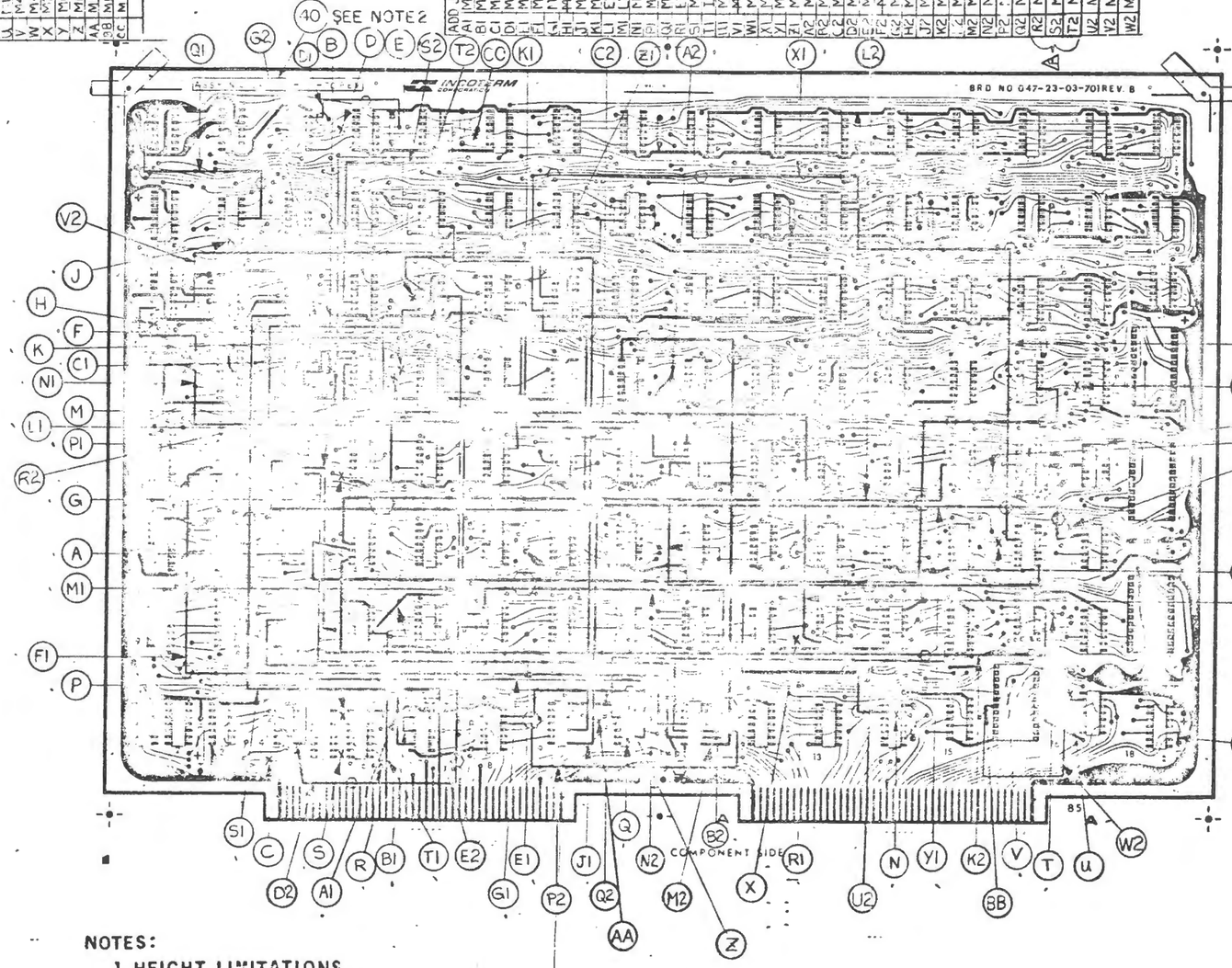
32 K DATA FLOW
REV 'E' dated 1/22/74
047-20-01-001

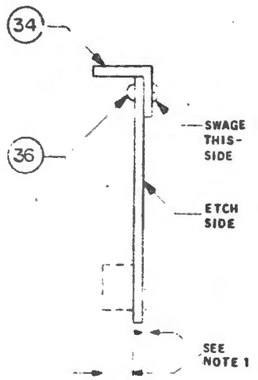
SHT 18

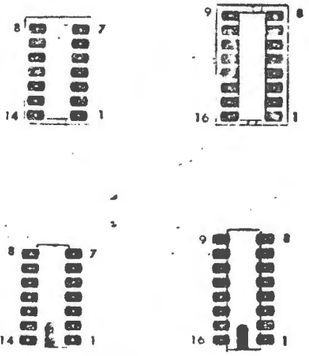
CUT ETCH FROM		
A	M38-12 TO	EYELET
B	M69-8	M68-5
C	M13-3	EYELET
D	M116-3	EYELET
E	M86-13	M86-13
F	M86-4	M116-13
G	M23-1	EYELET
H	M82-[illegible]	EYELET
J	M71-1	M16-18
K	M1-9	EYELET
L	M79-3	M47-8
M	M10-10	M47-15 TO
N	M14-1	M29-13 TO
P	M5-6	EYELET
Q	M10-11	M10-7
R	M16-1	I/O B33
S	M5-1	EYELET
T	M39-4	M16-18
U	M11-9	EYELET
V	M41-[illegible]	M47-8
W	M48-5 TO	EYELET
X	M29-13 TO	EYELET
Y	M10-2 TO	M10-7
Z	M10-10 TO	EYELET
AA	M16-19 TO	EYELET
BB	M118-13 TO	M119-4
CC		

ADD JUMPER WIRE (ITEM 43) FROM		
A1	M21-10 TO	M7-13
B1	M7-11	M7-9
C1	M66-5	EYELET
D1	M116-6	EYELET
E1	M52-2	M11-12
F1	M51-4	M11-13
G1	M111-11	M14-1
H1	M44-[illegible]	M86-4
J1	M52-11	M9-1
K1	M9-3	M86-10
L1	M52-3	M52-3
M1	LYLLET	M24-11
N1	M53-1	M53-1
P1	M52-15	M96-13
Q1	M52-10	M99-4
R1	PUH-10	M14-9
S1	EYELET	I/O B49
T1	M94-15	M22-4
U1	I/O B33	RESISTOR(RB)
V1	M18-3	M16-1
W1	M22-4	M16-1
X1	M48-10	M108-5
Y1	M108-6	M108-13
Z1	M19-9	M104-12
A2	M98-1	M102-2
B2	M96-1	M87-2
C2	M58-10 TO	M58-11
D2	M4-1	M87-3
E2	M22-4	M86-4
F2	M24-8	M24-9
G2	M14-1	M24-3
H2	M69-2	M69-1
J2	M79-3	M29-13
K2	M38-5	M38-12
L2	M38-11	M62-11
M2	M73-8	M11-1
N2	M21-8	M11-2
P2	M11-3	M8-5
Q2	M8-6 TO	M10-2
R2	M55-6 TO	M69-9
S2	M85-12 TO	M118-5
T2	M69-8 TO	M118-4
U2	M31-14 TO	M10-10
V2	M105-12 TO	M82-3
W2	M17-9 TO	M16-19

REVISION HISTORY				
			CHK	APPD
	A3	RELEASED/RD #7377	[illegible]	[illegible]
B		REVISED/ECO 3087		
C		REVISED/ECO 3087A	[illegible]	
D		REVISED/ECO 3099	[illegible]	
E		REVISED/ECO 3099 [illegible]	[illegible]	
F		REVISED/ECO 3265	[illegible]	
G		REVISED/ECO 3265 [illegible]	[illegible]	
H		REVISED/ECO 3292	[illegible]	
	H1	REVISED/ECO 3814 10-5-74	[illegible]	
	W2	REV/ECO 3487 11-1-74	[illegible]	
	H3	REV/ECO 3453 12/3/74	[illegible]	







PIN NUMBERING
AND ORIENTATION
RUN PRINTS - FULL SIZE,
DO NOT REDUCE

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-23-03-701 REV B

ITEM NO.	REFERENCE DESIGNATION
42	R9, 12
35	R11, 14, 5
34	
33	
32	M5
31	C1, C2, C3, C4, C5
30	C6 THRU C26
29	R3
28	
27	R1, R2
26	R4
25	R6, 7, 8, 13
24	M106, 12
23	M22, 6
22	M88, 11, 9, 7
21	M86, 10, 4, 3
20	M81, 65, 34, 16
19	M75
18	36, 35, 20 M115, 98, 84, 82, 67, 63, 50, 51
17	M114, 49, 33, 17, 99
16	M124, 23, 39
15	M91, 87, 61
14	M119, 110, 95, 46
13	M42, 28 M2, 122, 92, 85, 80, 76, 7[illegible]57, 54
12	M1, 31, 32, 26, 27 M128, 111, 107, 103, 93, 73, 62 59
11	M97, 94, 38, 21
10	52, 43, 30, 24, 18, 8 M113, 112, 109, 108, 105, 72, 69, 58
9	M40, 14, 117 M48, 116, 102, 96, 89, 74, 70, 68, 60, 56
8	M47, 45, 41, 4, 29, 25, 15, 13 M104, 101, 100, 90, 79, 78, 71, 55, 53, M129, 127, 126, 125, 123, 121, 118
7	
6	
5	
4	
3	
2	
1	

NOTES:

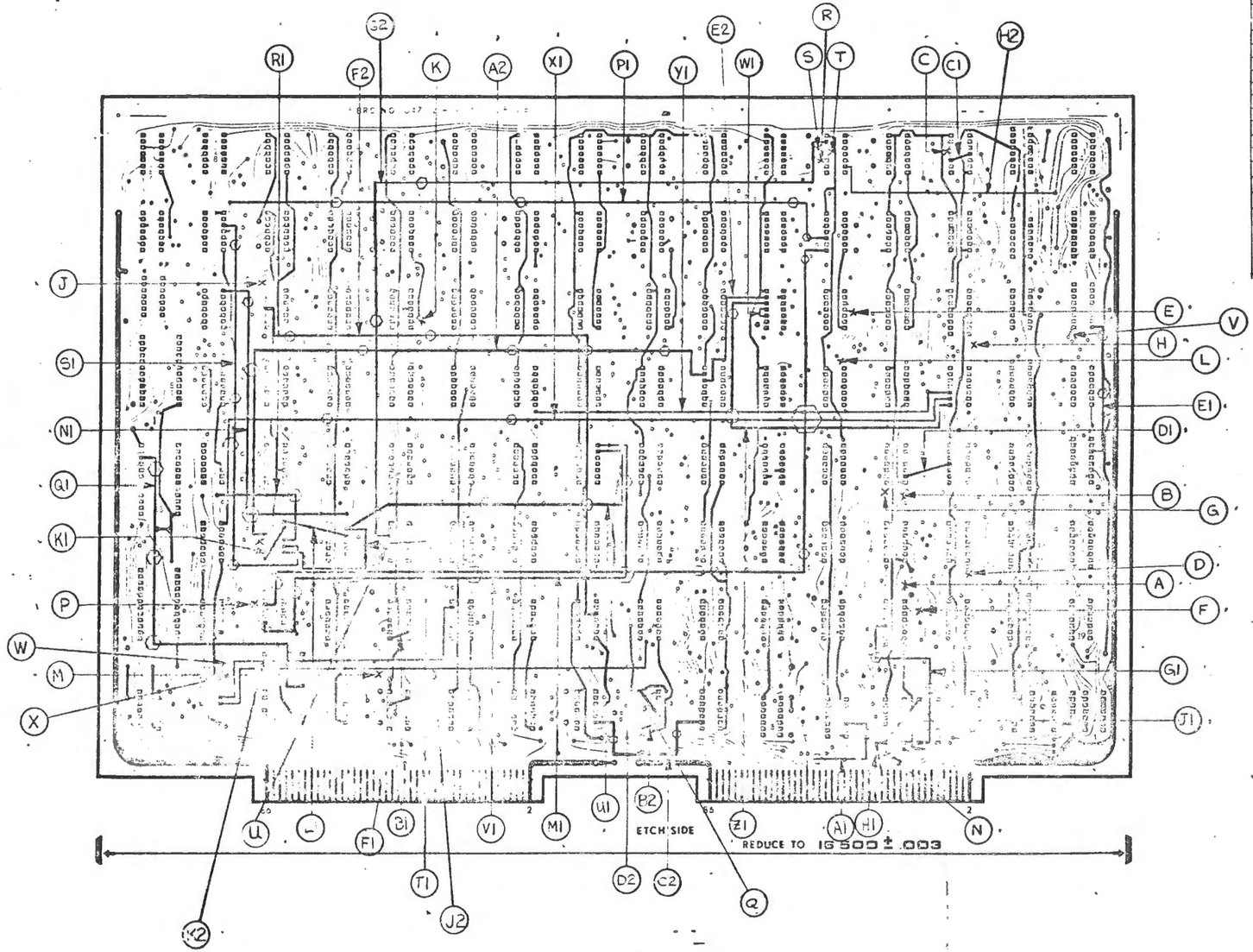
1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 38.
   AND MARK ASSY NO. 047 23-02-701 AND LATEST ASSY REVISION.
3. INSTALL SOCKET ITEM 40 IN THE FOLLOWING LOCATIONS:
   19, 37, 64, 66, 83, 120.
4. ATTACH JUMPER WIRES (ITEM 43) TO BOARD USING GLUE (ITEM 44) IN APPROXIMATE AREAS MARKED (O).

ASSEMBLY QUANTITIES

INCOTERM

P.C. BOARD ASSY
TPU CONTROL
-701B

Material	2-3-74		
Engineer	2-3-74	D	047-23-02 H3
Drafting			
		SCALE:	SHT 1 OF 4



	CUT ETCH FROM		
A	M58-11	TO	EYELET
B	M30-13		EYELET
C	M116-3		M116-6
D	M14-13		EYELET
E	M96-10		
F	M53-13		
G	M53-1		
H	M84-14		
J	M95-4		
K	M33-13		
L	M70-8		
M	M14-5		EYELET
N	M6-10		TO B30
P	M32-1	TO	M48-5
Q	M10-2	TO	M10-12
R	M118-4	TO	EYELET
S	M118-5	TO	EYELET
T	M118-6	TO	EYELET
U	M46-5	TO	EYELET
V	M82-3	TO	EYELET
W	M17-12	TO	EYELET
X	M17-11	TO	EYELET

	ADD JUMPER WIRE (ITEM 43) FROM		
A1	I/O B54	TO	M1-12
B1	M30-13		M30-1
C1	M116-11		M116-3
D1	M52-4		M53-13
E1	M96-11		M82-16
F1	M14-5		M14-9
G1	M22-4		M5-1
H1	I/O B30		M6-1
J1	M6-1		M5-8
K1	M48-1		M48-9
L1	M47-10		M48-8
M1	M102-1		M32-4
N1	EYELET		M96-8
P1	EYELET		M102-3
Q1	M65-10		M16-18
R1	EYELET		M48-11
S1	M112-10		M48-12
T1	M48-13		M47-9
U1	M47-9		M58-9
V1	M58-8		M32-1
W1	M87-3		M87-4
X1	M49-8		M68-2
Y1	EYELET		M68-3
Z1	M68-1		M87-5
A2	M72-6	TO	M48-5
B2	M10-1		M10-13
C2	M111-13		M9-2
D2	M10-7		M10-12
E2	M27-6		M72-5
F2	M27-10	TO	M95-4
G2	M118-6	TO	M46-5
H2	EYELET TO M118-13		
J2	M17-12 TO EYELET		
K2	M17-11 TO M29-6		

ITM	PART NO	DESCRIPTION	QTY PER ASSY
44		HOT MELT GLUE (THERMACOR)	102 OZ.
43	3HT-GR-GE-001	WIRE #24 GA. SOLID WHITE	32M
40	455-03-GR-001	SOCKET 14 PIN	6
31	305-01-03-006	CAP 5F 12V	5
30	CSC225DM4H/A100K	CAP. 1UF 100V 10% AMPERSX	21
26	RSR2276F221J	RESISTOR 220Ω 1/4 W	1
25	RSR1007F1J1J	RESISTOR 100Ω 1/4 W	4
24	ICSN7400N	14 PIN IC (A09)	2
22	ICSN7437N	14 PIN IC (A32)	4
15	ICSN7411N	14 PIN IC (A12)	3
13	ICSN7420N	14 PIN IC (A06)	11
12	ICSN7410N	14 PIN IC (A05)	13
11	ICSN7408N	14 PIN IC (A38)	14
10	ICSN7404N	14 PIN IC (A03)	14
9	ICSN7402N	14 PIN IC (A31)	13
8	ICSN7400N	14 PIN IC (A00)	24
2	047-23-0.1-701	ARTWORK ASSY (REV B)	1

ASSEMBLE WITH ARTWORK 047-23-03-701 REV B

REV	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES
			701 -1 -4 705 706 707

INCOTERM CORPORATION — 5 RAL MORE ROAD — HUNT ON MASSACHUSETTS 01760

PC BOARD ASSY
TFU CONTROLLER
-701B

SIZE	DOCUMENT NUMBER	REV
D	047-23-02	H3

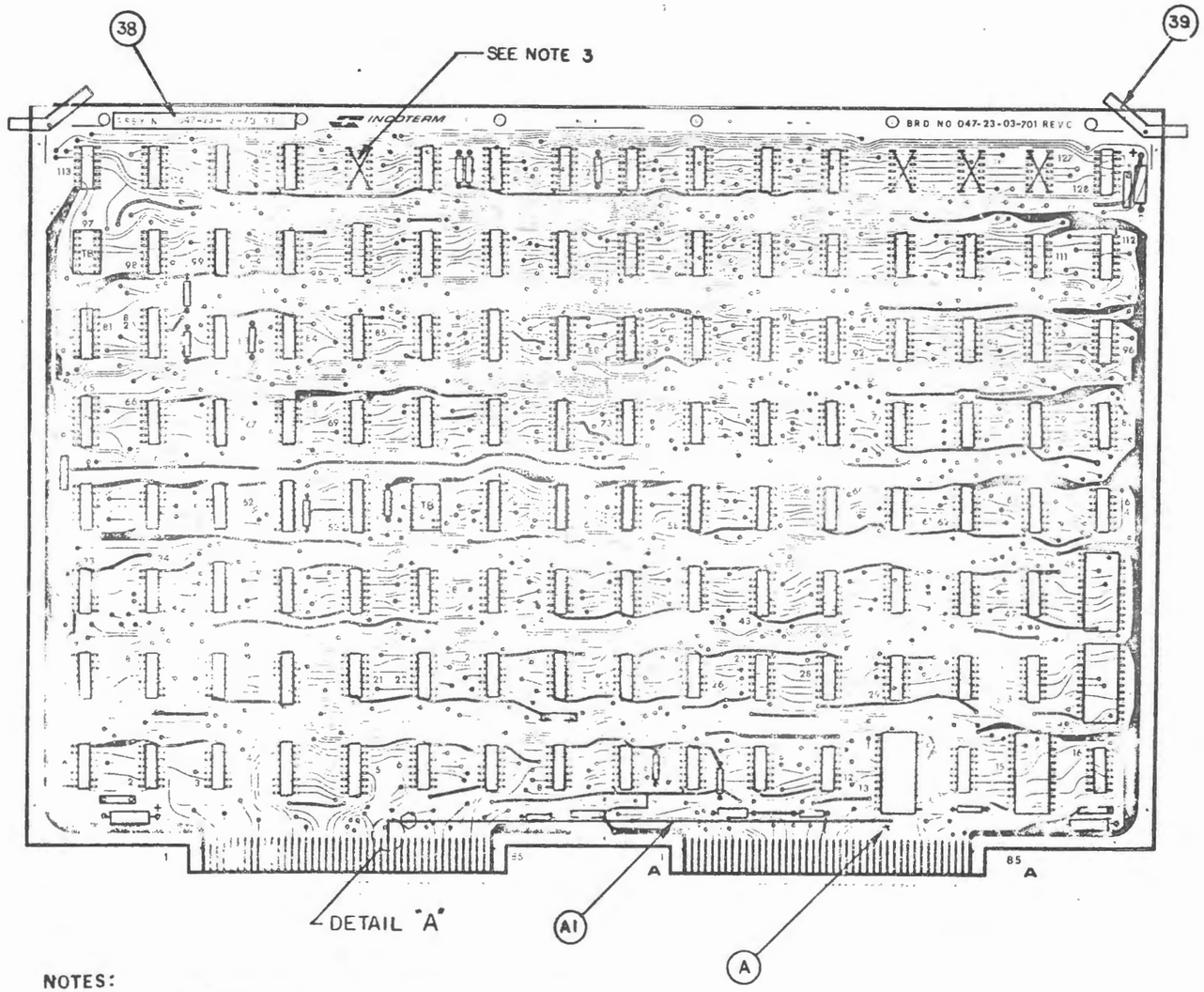
SCALE 1 — 1 | SHT 2 OF 4

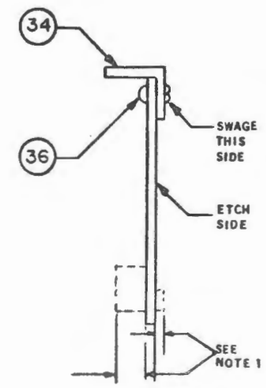
ETCH SIDE

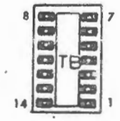
A	CUT ETCH I/O A55 TO EYELET

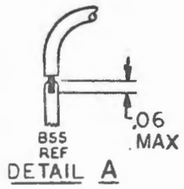
	ADD JUMPER
A1	EYLET TO I/O B55

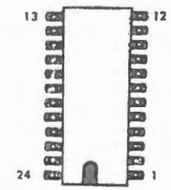
REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

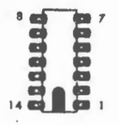


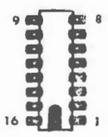












PIN NUMBERING
AND ORIENTATION

ITEM NO	REFERENCE DESIGNATION
42	R9,11
41	
40	M54,97(SOCKET)
39	
38	
37	
36	
35	R5,13,14
34	
33	
32	M4
31	C1,2,3
30	C4 - 9
29	R3
28	
27	R1.2
26	R4
25	R6,7,8,10,12
24	M10
23	M5,20
22	M8,22,116
21	M2,3,7,40
20	M13,15,32,48
19	M26
18	M35,52,53,55,65,70,72,81,82,87,101
17	M16,29,30,83,123
16	M24,105,121
15	M25,67,92,124
14	M44,57,60,93
13	M34,63,80,91,100,107,114,122,128
12	M19,28,42,46,50,56,61,74,78,106,111,113
11	M21,23,62,68,110
10	M6,9,12,14,17,31,37,39,64,76,84,90,102,109,112,119
9	M33,36,58,66,71,75,85,88,96,103,108,115
8	M1,11,18,27,38,41,43,45,47,49,51,59,69,73,77,79,86,89,94,95,98,99,104,118,120
7	
6	
5	
4	
3	
2	
1	

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 38.
   AND MARK ASSY NO. 047-23-02-701 AND LATEST ASSY REVISION.
3. PATTERNS MARKED "X" NOTE USED (M117, 125, 126, & 127)
4. SECURE WIRE, ITEM 43, TO BOARD
   USING GLUE, ITEM 44.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-23-03-701 REVC

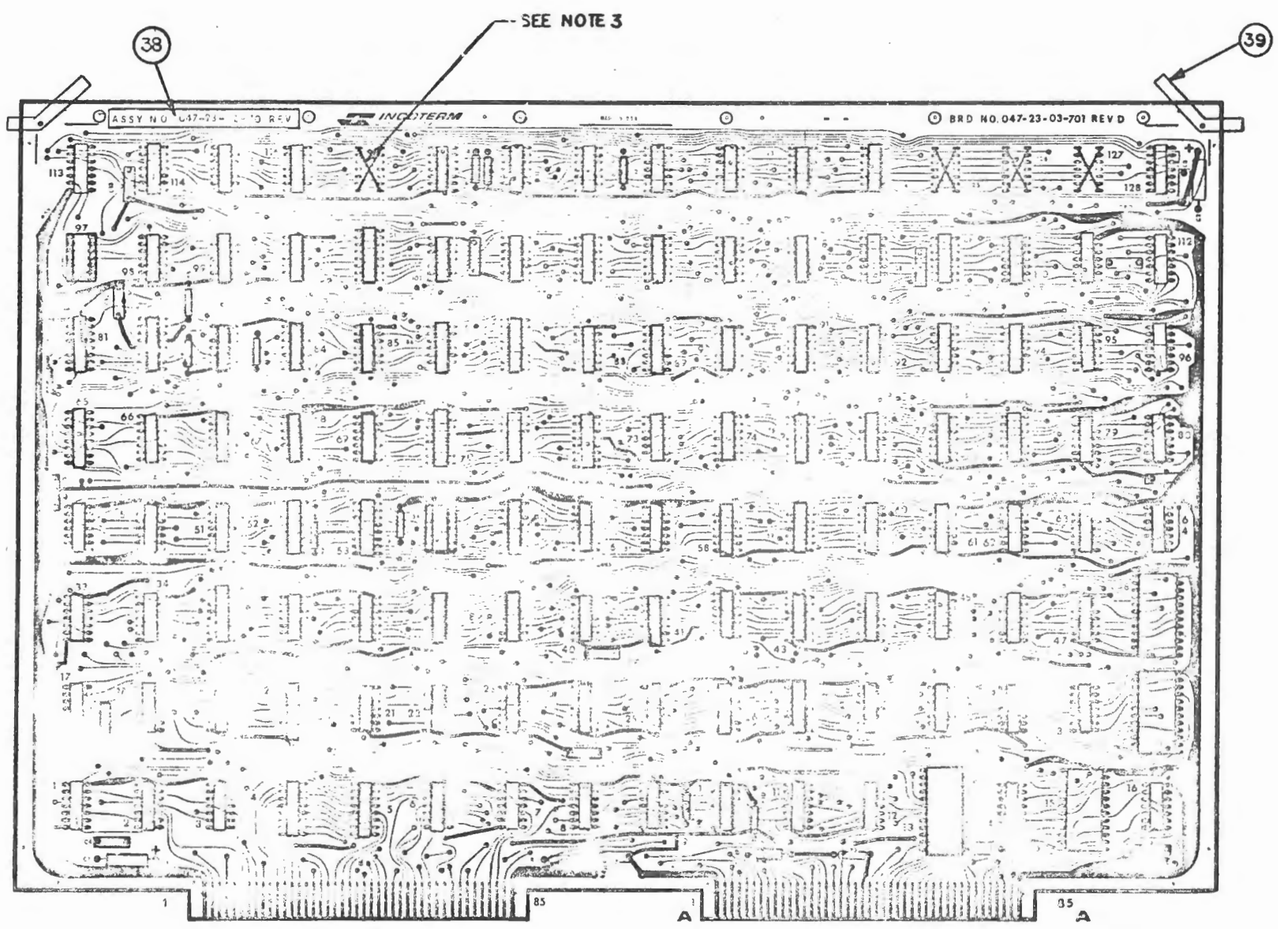
INCOTERM

P.C. BOARD ASSY
TPU CONTROL
BOARD CLUSTER -701

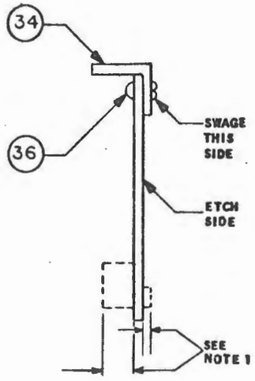
D 047-23-02 H3

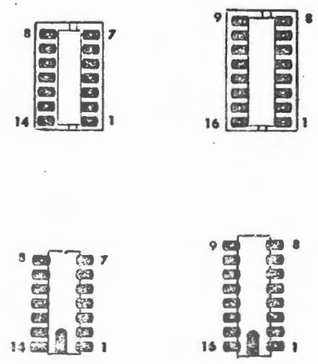
1:1 3 of 4

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD



ITEM NO.	REFERENCE DESIGNATION
42	R9,11
41	
40	M54,97 (SOCKET)
39	
38	
37	
36	
35	R5,13,14
34	
33	
32	M 4
31	C1,2,3
30	C4 -18
29	R3
28	
27	R 1,2
26	R4
25	R6,7,8,10,12
24	M10
23	M5,20
22	M8,22,116
21	M2,3,7,40
20	M13,15,32,48
19	M26
18	M35,52,53,55,65,70,72 81,82,87,101
17	M16,29,30,83,123
16	M24,105,121
15	M25,67,95,124
14	M44,57,60,93
13	M34,63,80,91,100,107, 114,122,128
12	M19,28,42,46,50,56,61,74, 78,106,111,113
11	M21,23,62,68,110
10	M6,9,12,14,17,31,37,39 64,76,84,90,102,109, 112,119
9	M33,36,58,66,71,75, 85,89,96,103,108,115
8	M1,11,18,27,38,41,43,45, 47,49,51,59,69,73,77, 79,86,89,94,95,98,99, 104,118,120
7	
6	
5	
4	
3	
2	
1	





PIN NUMBERING
AND ORIENTATION

NOTES:

1. **HEIGHT LIMITATIONS**
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. **LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 38**
   AND MARK ASSY NO. 047-32-02-701 AND LATEST ASSY REVISION.
3. PATTERNS MARKED "X" NOT USED (M117,125,126 & 127)

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-23-03-701-REV. D

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN	DATE
	10-22-79
CHECKED	10/25/79
ENGINEER	10/25/79
APPROVED	DATE
FIRST USE/ON	

P.C. BOARD ASSY
TPU CONTROL
BOARD CLUSTER-701

SIZE	DOCUMENT NUMBER	REV
D	047-23-02	H3

SCALE 1 - 1 SHT 4 OF 4

REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RELEASED PER ECO #7377		
B		REVISED/ECO 3087		
C		REVISED/ECO 3087A		
D		REVISED/ECO 3099		
E		REVISED/ECO 3099		
	E1	REVISED/ECO 3279		
F		REVISED/ECO 3292		
G		REVISED/ECO 3214 10/8/74		

SHEETS 2 THRU 17 FOR ARTWORK REV C OR GREATER
SHEETS 18 THRU 33 FOR ARTWORK REV A AND B ONLY

	SHEET	
18, 19	2,3,	INSTRUCTION REGISTER AND DECODER
20,	4,	GENERIC OP CODE DECODER
21, 22,	5,6,	MISCELLANEOUS CONTROL
23,24, 25,	7,8,9,	STATE COUNTER
26, 27,	10,11,	AUXILIARY ARITHMETIC UNIT CONTROL
28,	12,	ARITHMETIC UNIT CONTROL
29,	13,	REAL TIME CLOCK MODULE
30,	14,	INTERRUPT CONTROLS
31,	15,	CONTROLLER DECODER AND WIRE OPTION MATRIX
32,	16,	CONTROL LINE DRIVERS
33,	17	INTERRUPT LOGIC

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTOR VALUES ARE IN OHMS AND ARE 1/4 WATT ±5%

HIGHEST REF DES ASSIGNED		
CAPS	RES	I/C'S
C	R14	M128
REF DESIGNATION NOT USED		
		M117, 125, 126, 127 ARTWORK REV'C' OR UP

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
8 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no rights is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source

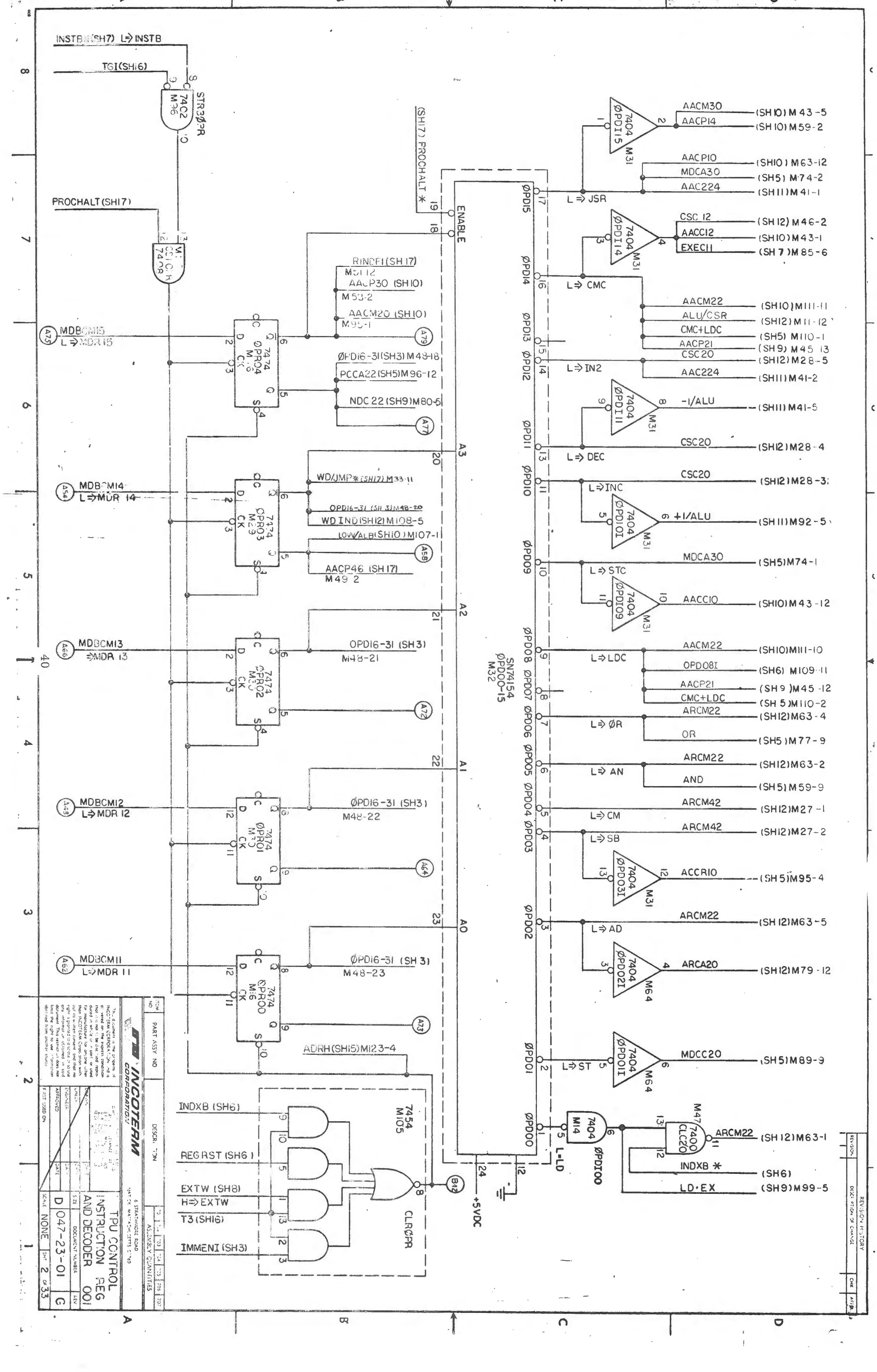
TITLE: TPU CONTROL LOGIC DIAGRAM 001

DRAWN
CHKD
APPD

SIZE D | DOCUMENT NUMBER 047-23-01 | REV G

NEXT USED ON 047 23 02-701

SCALE NONE | SHT 1 OF 33


INSTB (SH7) L⇒ INSTB
TGI (SH16)
74C2 M36
STR3ØPR
PROCHALT (SH17)
MDBCMI5
L⇒MDR 15
MDBCMI4
L⇒MDR 14
MDBCMI3
⇒MDR 13
MDBCMI2
L⇒MDR 12
MDBCMI1
L⇒MDR 11
7474 ØPR04 M16
7474 ØPR03 M29
7474 ØPR02 M30
7474 ØPR01 M30
7474 ØPR00 M16
PROCHALT * (SH17)
ENABLE
RINDEI (SH17) M51-12
AACP30 (SH10) M53-2
AACM20 (SH10) M95-1
ØPDI6-31 (SH3) M48-18
PCCA22 (SH5) M96-12
NDC 22 (SH9) M80-5
WD/JMP* (SH17) M33-11
ØPDI6-31 (SH3) M48-20
WD IND (SH12) M108-5
LOW ALB (SHIØ) MI07-1
AACP46 (SH17) M49-2
ØPDI6-31 (SH3) M48-21
ØPDI6-31 (SH3) M48-22
ØPDI6-31 (SH3) M48-23
ADRH (SHI5) MI23-4
A3
A2
A1
A0
SN74154 ØPDØØ-15 M32
ØPDI5
ØPDI4
ØPDI3
ØPDI2
ØPDII
ØPDI0
ØPD09
ØPD08
ØPD07
ØPD06
ØPD05
ØPD04
ØPD03
ØPD02
ØPD01
ØPD00
7404 ØPDI15 M31
AACM30 (SH10) M43-5
AACPI4 (SH10) M59-2
L⇒ JSR
AACPI0 (SH10) M63-12
MDCA30 (SH5) M74-2
AAC224 (SH11) M41-1
7404 ØPDI14 M31
CSC 12 (SH12) M46-2
AACCI2 (SH10) M43-1
EXECII (SH 7) M85-6
L⇒ CMC
AACM22 (SH10) MIII-11
ALU/CSR (SH12) MII-12
CMC+LDC (SH5) MII0-1
AACP2I (SH 9) M45-13
L⇒ IN2
CSC20 (SH12) M28-5
AAC224 (SH11) M41-2
7404 ØPDIII M31
-1/ALU (SH11) M41-5
L⇒ DEC
CSC20 (SH12) M28-4
L⇒INC
CSC20 (SH12) M28-3
7404 ØPDIØI M31
+1/ALU (SH11) M92-5
L⇒ STC
MDCA30 (SH5) M74-1
7404 ØPDI09 M31
AACCI0 (SH10) M43-12
L⇒LDC
AACM22 (SH10) MIII-10
OPD08I (SH6) MI09-11
AACP2I (SH 9) M45-12
CMC+LDC (SH 5) MII0-2
L⇒ ØR
ARCM22 (SH12) M63-4
OR (SH5) M77-9
L⇒ AN
ARCM22 (SH12) M63-2
AND (SH5) M59-9
L⇒ CM
ARCM42 (SH12) M27-1
L⇒ SB
ARCM42 (SH12) M27-2
7404 ØPDØ3I M31
ACCRI0 (SH5) M95-4
L⇒ AD
ARCM22 (SH12) M63-5
7404 ØPDØ2I M64
ARCA20 (SH12) M79-12
L⇒ ST
MDCC20 (SH5) M89-9
7404 ØPDØII M64
7404 MI4 M47
7400 CLC20
ARCM22 (SH12) M63-1
INDXB * (SH6)
LD·EX (SH9) M99-5
L=LD
ØPDI00
7454 MI05
INDXB (SH6)
REGRST (SH6)
EXTW (SH8)
H⇒ EXTW
T3 (SH16)
IMMENI (SH3)
CLRØPR
+5VDC
B42
INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK MASSACHUSETTS 01760
TPU CONTROL INSTRUCTION REG AND DECODER 001
D 047-23-01 G
SCALE NONE SHT 2 OF 33
REVISION HISTORY
DESCRIPTION OF CHANGE
ITEM NO
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
APPROVED
ENGINEER
DRAFTING
DATE
IF NOT USED ON
SIZE
DOCUMENT NUMBER
REV

(SH7) INSTC
(SH17) PROCHALT
M47 PHEN 7400
IMMENI Q5
7404 M90
CLROPR
(SH 2) M105-3
ENABLE
ØPD31
ØPD30
ØPD29
ØPD28
ØPD27
ØPD26
ØPD25
ØPD24
ØPD23
ØPD22
ØPD21
ØPD20
ØPD19
ØPD18
ØPD17
ØPD16
ØPRO4 (SH2)
H⇒ ØPRO4
ØPRO3* (SH2)
H⇒ØPRO3
ØPRO2* (SH2)
H⇒ØPRO2
ØPRO1* (SH2)
H⇒ØPRO1
ØPROO* (SH2)
H⇒ØPROO
ACC R22
(SH 5) M 91-1
7404 M64
H ⇒XØR
ØPD26I
ATTENTION
IØTEST
(SH11) M106-5
ARCIIO
(SH12) M46-5
RIØACK
(SH 6) M122-13
IØNACK (SH6)
M106-9
ØPDI25
L⇒I/Ø
INTSELFN
(SH14) M34-5
INTERRUPTI
(SH14) MI-10
CONTOO-15
M13-18
(SH15)
CM OH
(SH9) M83-4
PROCHALT
(SH17) M83-10
ØPDGOO-15
(SH4) MI5-18
L⇒GENERIC
INHPCR
(SH17) M33-2
JMPIND
(SH 6) M79-5
WD/JMP X
(SH17) M33-12
ØPD23I
L⇒JMP
AACM20
(SH10) M95-2
NDC22
(SH9) M80-4
EXC32
(SH 7) M111-1
RINDFI
(SH 17) M5[illegible]-3
MDR/ALUB
(SH12) M44-4
L⇒ØRI
OR
(SH 5) M77-10
L⇒ANI
AND
(SH 5) M59-10
MDR*/ALUB
(SH 12) M28-10
L⇒CJXX
MDR*/ALUB
(SH12) M28-1;
ACCR22
(SH 5) M91-2
L⇒SBI
MDR/ALUB
(SH12) M44-1
ACRALU
(SH12) M28-1
L⇒ADI
CJØRJC
7400 M47
FAIL TEST
(SH11) M25-10
SUCC TEST (SH11) M25-4
L⇒JCXX
MDR/ALUB
(SH12) M44-12
F=B (SH9) M100-4
L⇒LDI
M48
SN 74154
ØPDI6-31
+5VDC
A3
A2
A1
A0
A83
B64
20
21
22
23
24
12
41

ITEM NO	PART/ASSY NO	DESCRIPTION	QTY
			701 702 703 704 705 706 707
			ASSEMBLY QUANTITIES

"This document is the property of INCOTERM CORPORATION and is disclosed on the express condition that it is not to be used, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or use any information contained herein. This document does not convey any rights to use information obtained from another source."

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

DRAWN
CHECKED
ENGINEER
APPROVED
FIRST USED ON

DATE

TITLE: TPU CONTROL - INSTRUCTION REG AND DECODER 001

SIZE: D
DOCUMENT NUMBER: 047-23-01
REV: G
SCALE: NONE
SHT 3 OF 33

REVISION | DESCRIPTION OF CHANGE

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APVD

WAITEN (SH9 M115-2)

SET INTDL (SH14) M19-13

ACCR12 (SH5) M75-12

ØPDG10I

M14 7404

A34

ACR/ALB (SH12) M11-4

I/ØRST (SH6) M118-13

ØPDG07I (SH11) M112-13

CLRINTMK (SH14) M19-9

INTSELEN (SH14) M34-4

SETINTDL (SH14) M19-2

A80

L⇒WAIT

L⇒SHIFT LEFT

L⇒4BIT SHIFT

L⇒I/O RESET

L⇒DIN

L⇒EIN

L⇒HALT

17 16 15 14 13 11 10 9 8 7 6 5 4 3 2 1

ØPDG15 ØPDG14 ØPDG13 ØPDG12 ØPDG11 ØPDG10 ØPDG09 ØPDG08 ØPDG07 ØPDG06 ØPDG05 ØPDG04 ØPDG03 ØPDG02 ØPDG01 ØPDG00

M15
ØPDG00-15
SN74154

12

24 +5VDC

ENABLE 19 18

A3 20

A2 21

A1 22

A0 23

PRØCHALT* (SH.17)

ØPD24 (SH 3) L⇒GENERIC

CØNTOO-15 MI3-20 (SH15)

CØNTOO-15 MI3-21 (SH15)

CØNTOO-15 MI3-22 (SH15)

CØNTOO-15 MI3-23 (SH15)

AACP44 M33-6 (SH 17)

2 MDR03* M14 7404 1 L⇒MDR03 A82

8 MDR02* M14 7404 9 L⇒MDR02 A74

10 MDR01* M14 7404 11 L⇒MDR01 A76

12 MDR00* M14 7404 13 L⇒MDR00 A73

ITEM NO	PART ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

TITLE: TPU CONTROL GENERIC OP CODE DECODER 001

DRAWN	DATE	SIZE	DOCUMENT NUMBER / REV
CHECKED	DATE	D	047-23-01 G
ENGINEER	DATE		
APPROVED	DATE	SCALE NONE	SHT 4 OF 33
FIRST USED ON			

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APP'D

EXC22 (SH 7) M114-4
L⇒AAR→PCR
2
ALUPCRI
7404 M30
1

MAC410 (SH 6) M106-13
EXC62 (SH 7) M34-13
EXC60 (SH 7) M50-3

A28

H⇒ ALU-PCR

A26
L⇒STROBE PCR
8
7451 M92 STRBPCR
13 1 9 10 T17(SH16)

STRBMAR (SH 6) M121-10

ACCS12 (SH 6) M23-13
H⇒ ARU→ACR
8
ARUACR 7420 M91
12 10 13 9

STRBACRL (SH 6) M39-9
4
ARUACRI
7404 M119
3

A43
L⇒STROBE INDEX REG

STRBMDR (SH 5) M75-2
10
7404 M76
11
MEMSTRBI

F=A
B53

6
MEMSTRB
7410 M74
5 4 3

11
7400 M77 STRBIR
12 13

12 3
CUC12
7400 M77
1 2

12
7410 M78 CUC20
2 5

6
7400 M77 CUC30
4 5

A23
L⇒ACR→MDR

8
7410 M74 MDCC10
9 10 11

6
7400 M89 MDCC20
9 10

A27
H⇒STROBE MDR BYTE
10
STRBBYTE
7402 M75
8 9

671
CLKMDR (SH 8) M68-12
L⇒ALU→MDR
8
7400 M73 ALUMDB
10 9

11
7400 M73 ACRMDB
13 12

6
MDCA10
7400 M73
4 5

3
MDCA20
7400 M73
2 1

ADRH(SH15) M123-3

3
BYPASS
7400 M89
2 1

11
7400 M89 BYPASS*
13 12

8
T14I
7404 M76
9

T14 (SH 16)

A22
L⇒AND SELECT TO ALU

12
ANDI
7404 M76
13

11
7408 M62 MDCA40
12 13

8
AND
7400 M59
9 10

A24
L⇒OR SELECT TO ALU

4
ORI
7404 M76
3

8
7400 M77 OR
9 10

12
7410 M74 MDCA30
13 2

A31
L⇒STROBE MDR 00-11

1
7402 M75 STRBMDR
2 3

4
7402 M75 MDCA60
5 6

INSTB* (SH 7)
ØPRO4 (SH 2) L⇒ØPRO4
EXECB (SH 7)
EXC 20 (SH 7)
AAC220(SH11) M42-4
OPD14 (SH 2)
OPD08 (SH 2)
SUCCTEST(SH11)
H⇒NOT SUCCESSFUL TEST (SH11)
JMP IND(SH 6) H⇒ NOT JMP IND
IO NACK(SH6) H⇒ NOT IO•ACK
EXTH (SH 8)
EXECD (SH 7)
REGRST (SH 6) H⇒ REG RESET
EXECA (SH7)
ØPD03I (SH 2) H⇒SE
MARCLK (SH 16)
INHCLK (SH 17)
MDR/ALUBI (SH 12)
OPDG10I (SH4)
ØPD26 (SH 3) L⇒XOR
ØPD19 (SH 3) L⇒SBI
RIØACK (SH 6) L⇒RIO-ACK
ACK/ALBI (SH 12) L⇒ BT SHIFT+SHIFT
BT WAIT (SH 8) L⇒ BT WAIT

PCCA22
13
7402 M96
1 2
CMC•LDC
3
7408 MI10
PCCA10
6
7410 M78
5 3 4
PCCA12
8
7420 M128
13 9 12 10
ALUPCR
6
7420 M122
1 4 2 5
ACCR10
6
7400 M95
5 4
TI7INH
7402 M96
2 3
ACCR12
13
7402 M75
12 11
ACCR22
6
7420 M91
2 4 5

MARCUR(SH 16)
CSC20(SH 12)
TIOI(SH 16)
OPD08I(SH 6)
T6(SH 16) H⇒T6
EXECA (SH 7)
INHCLKI(SH 17)
INSERT(SH16)H⇒ NOT INSERT
ØPD01I(SH2)H⇒ST
EXTW* (SH 8)
BØØTx (SH 8)
TIME 7I (SH 16)
OPD09(SH2)L⇒STC
CSC21(SH12)L⇒ INC+DEC+IN2
ØPD15 (SH 2) L⇒ JSR
EXIC(SH 8)
AACCII (SH 10)
ØPD05 (SH 2) L⇒AN
ØPD21 (SH 3) L⇒ANI
ØPD06 (SH 2) L⇒ØR
ØPD22 (SH 3) L⇒ØRI
MEMSTRBI (SH 5)
TIMEII(SH 16)
CLKMDR (SH 8)

ITEM NO.	PART ASSY. NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is loaned on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN	DATE	TITLE	TPU CONTROL MISCELLANEOUS CONTROL OCI
CHECKED	DATE	SIZE	DOCUMENT NUMBER / REV
ENGINEER	DATE	D	047-23-01 G
APPROVED	DATE	SCALE	NONE SHT 5 OF 33
FIRST USED ON			

SPLDCI (SH14) M17-3

FSA3 (SH14) M1-1

EXECB (SH 7)

AACCII (SH10) M43-10

OPD08 (SH 2)

M85-5 EXECII (SH 7)

M77-4 CUC30 (SH 5)

7400 M79 — SPLDC

7404 M109 — OPD08I

ALUPCR (SH5) H⇒ ALU-PCR

EXTZ * (SH8) H⇒ NOT EXTZ

INTERRUPT (SH 14) H⇒ INTERRUPT

7410 M106 — MACAI0

MACAI1

7408 M23

RETURN (SH 14) M18-12

7404 M39 — ALU/MAB

L⇒ INHIBIT ALU→MAB (B33)

MABSP02 (SH 14) M2-1

MABSP03 (SH 14) M2-4

MABSP04 (SH 14) M3-10

MABSP05 (SH 14) M3-13

MABSP06 (SH 14) M7-1

MABSP011 (SH 14) M7-13

7420 M128 — SPAMAB

H⇒ SPECIAL ADDRESS→MAB

EXTD (SH 8) L⇒ EXTD

ARUACRI (SH 5)

7404 M39 — STRBACRL

H⇒ STRØBE ACR0-3 (B71)

ARUACR (SH 5)

L⇒ BTWAITB (SH 8)

7408 M 23 — ACCSI2

H⇒ STRØBE ACR4-7 (B72)

PWRRST * (SH7) L⇒ PROG START

SUCCTEST (SH 11)

L⇒ SUCCESSFUL TEST

7420 M80 — INDXB

AACM15 (SH10) M62-5

ENIND2 (SH17) M51-4

CLRØPR (SH 2) M105-9

EXC20 (SH 7) M113-4

INSTA (SH7) L⇒ INSTA

7400 M79 — INDXB *

CLC20 (SH 2) M47-12

AAC220 (SH 11) M42-5

AACP10 (SH 10) M63-9

ØPD23I (SH 3) H⇒ JMP

MDR10 * (SH 16) H⇒ INDIRECT

7400 M73 — JMPIND

PCCA12 (SH 5) M128-12

L⇒ JMP INDIRECT

MDR09 * (SH 16) H⇒ RIO + WIO

ACK11 (SH6) H⇒ NOT I/O ACKNOWLEDGE

ØPDI25 (SH 3) H⇒ I/Ø

7410 M106 — IØNACK

L⇒ (RIO + WIO) ACK

CLRINTMK (SH 14) M19-11

XTC10 (SH 8) M86-10

PCCA12 (SH 5) M128-10

AACP12 (SH 10) M42-1

EXC22 (SH 7) M114-1

ENENC1 (SH 17) M19-4

ACCR22 (SH 5) M91-4

L⇒ RIO • ACK

MDR08I (SH 16) H⇒ TYPE 2°

7420 M122 — RIØACK

IØTSTS (SH 11) M26-13

IØTSIF (SH 11) M26-1

AKDRTC (SH 13) L⇒ ACK FROM I/Ø BUS

7404 M119 — ACKI

H⇒ I/O ACKNOWLEDGE

ARCI10 (SH 12) M46-4

BTC24 (SH 8) M71-6

R1 820Ω 1/4W

+5V

R2 820Ω 1/4W

7404 M119 — ACKII

IØNACK (SH 6) M106-11

L⇒ I/O ACKNOWLEDGE

L⇒ BOOT FROM I/Ø BUS (B70)

7404 M119 — BOOTI

H⇒ BOOT

BTC12 (SH 8) M86-2

BTC60 (SH8) M58-8

BØØTII

7404 M119

STRBMAR (SH6) M121-9

BTC14 (SH 8) M71-2

L⇒ BOOT

CONSOLE RESET (B53)

ENTRY I.M39-3 (SH.8)

ENTRY (SH 8) M56-8

L⇒ BOOT ENTRY

PWRRST * (SH 7)

L⇒ PWR RESET

7400 M118 — REGRST

H⇒ REG RESET

CLRØPR (SH 2) M105-5

STRBMAR (SH 6) M121-1

STRBPCR (SH 5) M92-9

STRBCSRI (SH 12) M108-3

7404 M119 — REGRSTI

INTH (SH17) M52-3

IØRST

7400 M118

7437 M116 — RESET

ØPDG08 (SH 4)

L⇒ RESET I/O

L⇒ RESET TO I/O BUS (B60)

INTMASK (SH 14) M35-3

CLRRTC (SH 13) M120-10

RTCMSK (SH13) M72-8

BOOTXI (SH8)

MARCLKI (SH 16)

T17 (SH 16) H⇒ T17

REGRST (SH 6)

T17INH (SH 5)

BOOT II (SH 6)

7454 M121 STRBMAR

L⇒ STROBE MAR (B40)

44

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be published, reproduced or copied in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

INCOTERM CORPORATION
4 STRATHMORE ROAD NATICK MASSACHUSETTS 01760

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES
			701 702 703 704 705 706 707

DRAWN
CHECKED
ENGINEER
APPROVED
DATE

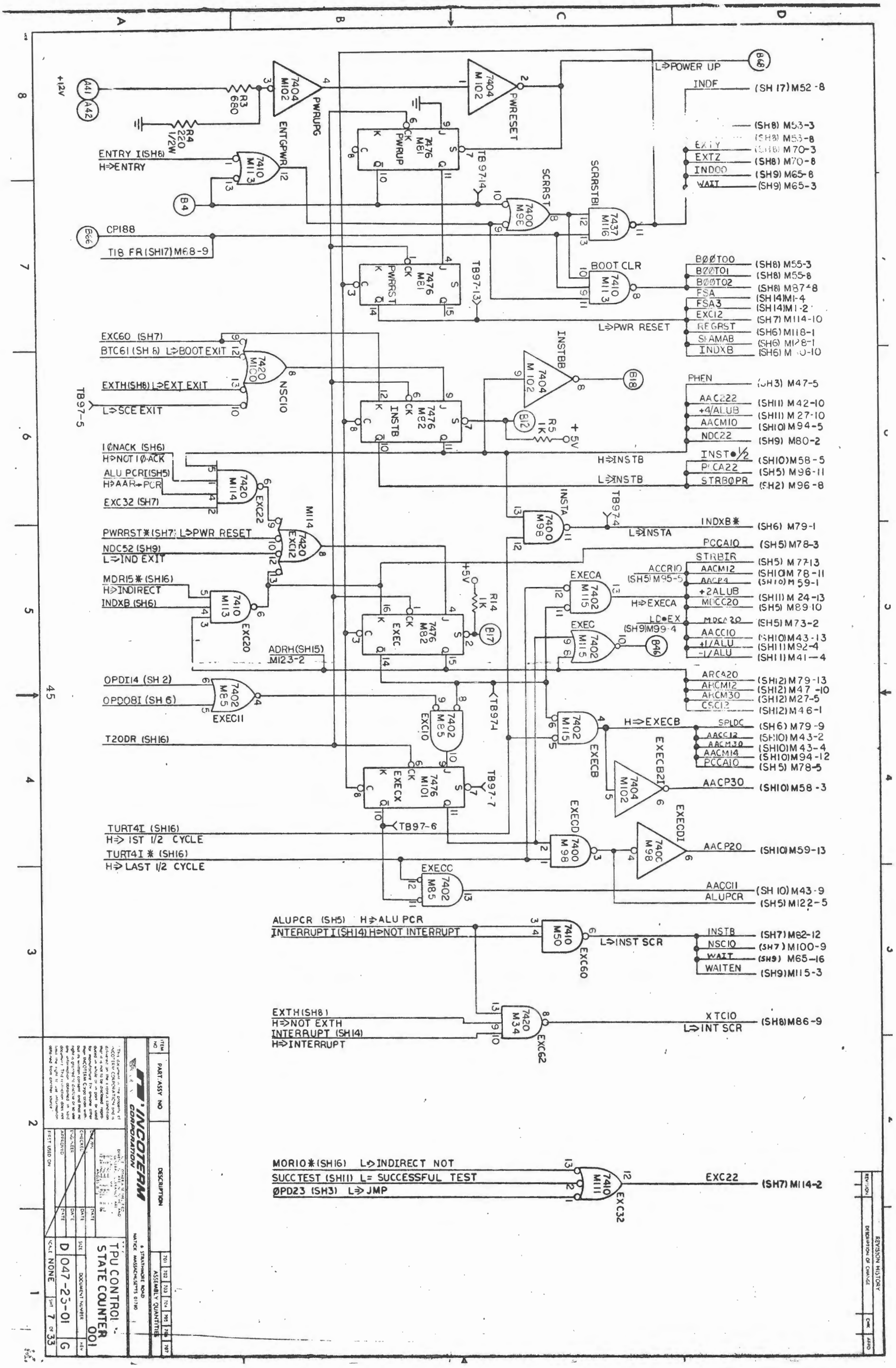
FIRST USED ON

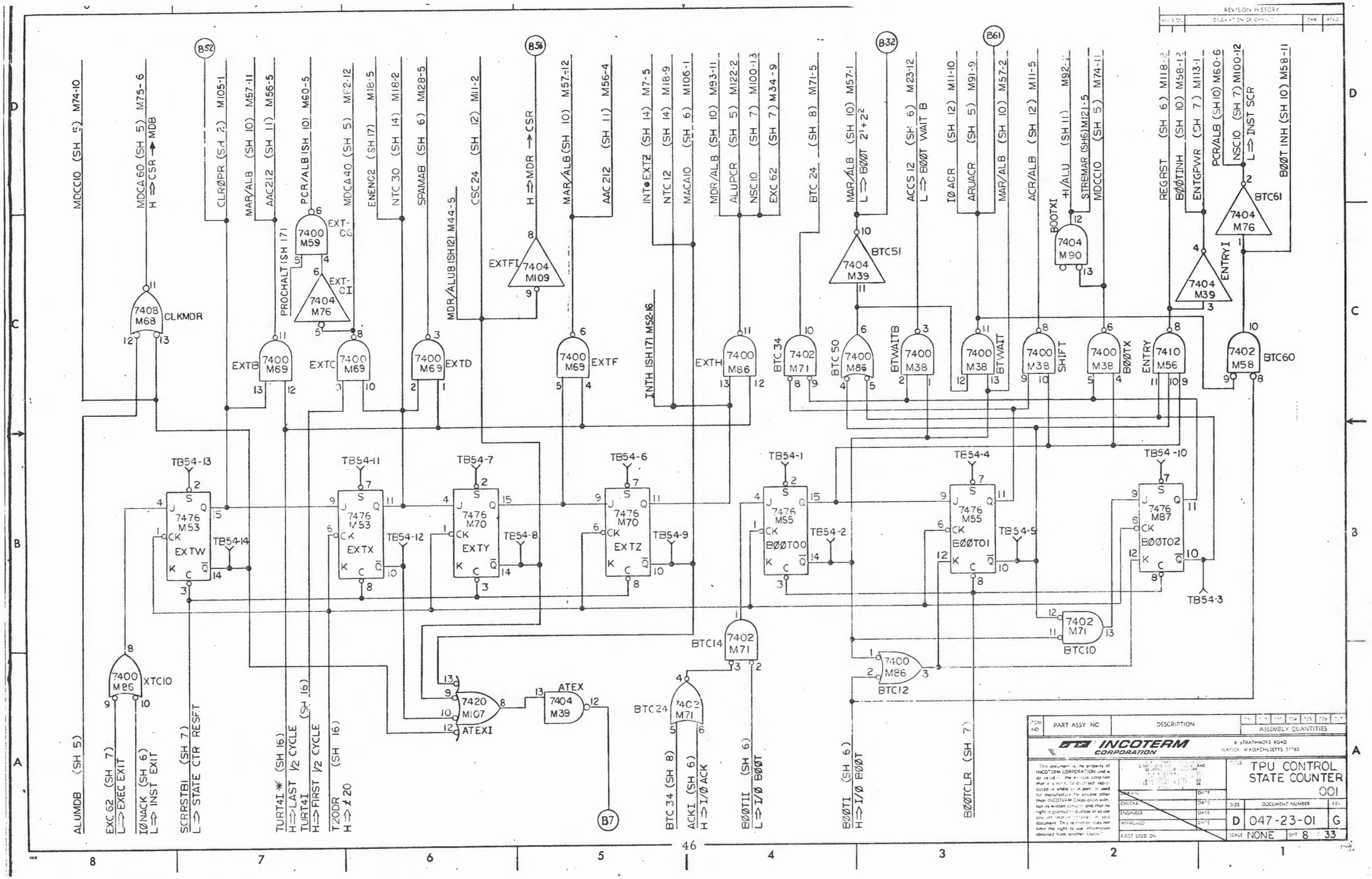
TPU CONTROL - MISCELLANEOUS CONTROL CO

SIZE D | DOCUMENT NUMBER 047-23-01 | REV G

SCALE NONE | SHT 6 OF 33

REVISION	DESCRIPTION OF CHANGE	CHK	APPD


L⇒POWER UP
INDF
(SH 17) M52 -8
(SH8) M53-3
(SH8) M53-8
EXTY
EXTZ
INDOO
WAIT
(SH8) M70-3
(SH8) M70-8
(SH9) M65-8
(SH9) M65-3
+12V
ENTRY I(SH6)
H⇒ENTRY
CP188
T18 FR(SH17)M68-9
BØØTOO
BØØTO1
BØØTO2
FSA
FSA3
EXCI2
REGRST
SHAMAB
INDXB
(SH8) M55-3
(SH8) M55-8
(SH8) M87-8
(SH14)MI-4
(SH14)MI-2
(SH7) M114-10
L⇒PWR RESET
EXC60 (SH7)
BTC61 (SH 6) L⇒BOOT EXIT
EXTH(SH8) L⇒EXT EXIT
L⇒SCE EXIT
TB97-5
NSC10
INSTBB
PHEN
(SH3) M47-5
AAC22
+4/ALUB
AACM10
NDC22
(SH11) M42-10
(SH11) M 27-10
(SH10) M94-5
(SH9) M80-2
I ØNACK (SH6)
H⇒NOT I Ø ACK
ALU PCR(SH5)
H⇒AAR→PCR
EXC32 (SH7)
INST•½
PCAA22
STRBØPR
(SH10)M58-5
(SH5) M96-11
(SH2) M96-8
H⇒INSTB
L⇒INSTB
INDXB*
L⇒INSTA
(SH6) M79-1
PWRRST*(SH7) L⇒PWR RESET
NDC52 (SH9)
L⇒IND EXIT
PCCAIO
STRBIR
ACCRIO
AACM12
AACP4
(SH5) M77-13
(SH10) M78-11
(SH10) M 59-1
MDRI5*(SH16)
H⇒INDIRECT
INDXB (SH6)
+2ALUB
MDCC20
(SH11) M 24-13
(SH5) M89-10
H⇒EXECA
LD•EX
(SH9)M99-4
MDCA20
AACIO
+1/ALU
-1/ALU
(SH5) M73-2
(SH10)M43-13
(SH11)M92-4
(SH11)M41-4
ADRH(SH15)
MI23-2
OPDI14 (SH 2)
OPDO8I (SH 6)
ARCA20
ARCM12
ARCM30
CSCI2
(SH12) M79-13
(SH12) M47 -10
(SH12) M27-5
(SH12) M46-1
T20DR (SH16)
H⇒EXECB
SPLDC
AACI2
AACM30
AACM14
PCCAIO
(SH6) M79-9
(SH10) M43-2
(SH10)M43-4
(SH10)M94-12
(SH5) M78-5
AACP30
(SH10) M58-3
TURT4I (SH16)
H⇒ IST 1/2 CYCLE
TURT4I * (SH16)
H⇒ LAST 1/2 CYCLE
AACP20
(SH10)M59-13
AACII
ALUPCR
(SH 10) M43-9
(SH5) M122-5
ALUPCR (SH5) H⇒ALU PCR
INTERRUPT I (SH14) H⇒NOT INTERRUPT
L⇒INST SCR
INSTB
NSC10
WAIT
WAITEN
(SH7) M82-12
(SH7) M100-9
(SH9) M65-16
(SH9) M115-3
EXTH(SH8)
H⇒NOT EXTH
INTERRUPT (SH14)
H⇒INTERRUPT
XTC10
L⇒INT SCR
(SH8) M86-9
MOR10*(SH16) L⇒INDIRECT NOT
SUCCTEST (SH11) L= SUCCESSFUL TEST
ØPD23 (SH3) L⇒JMP
EXC22
(SH7) M114-2
R3 680
R4 220 1/2W
R5 1K
R14 1K
+5V
TB97-14
TB97-13
TB97-4
TB97-7
TB97-6
7404 M102
7410 MII3
7476 M61
7400 M9E
7437 MII6
7476 M82
7420 MIC0
7420 MII4
7400 M98
7402 M115
7402 M85
7476 MIOI
7410 M50
7420 M34
7410 MIII
A41
A42
B4
B66
B48
B18
B12
B17
B46
EXCII
EXC10
EXECX
EXECB
EXECD
EXECC
EXECB2I
EXECDI
INCOTERM CORPORATION
TPU CONTROL STATE COUNTER 001
D 047-23-01 G
SCALE NONE
SHT 7 OF 33
6 STRATHMORE ROAD NATICK MASSACHUSETTS 01760
REVISION HISTORY



REVISION HISTORY

ITEM NO	DESCRIPTION	CHK	APVD

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is disclosed in confidence. It is not to be disclosed, reproduced in whole or in part, or used for manufacture by anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

TPU CONTROL STATE COUNTER 001

DRAWN	DATE
CHECKED	DATE
ENGINEER	DATE
APPROVED	DATE
FIRST USED ON	

SIZE	DOCUMENT NUMBER	REV
D	047-23-01	G

SCALE NONE SHT 8 : 33

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

ENIND1 (SH17) M67-3
AACM28 (SH10) M109-1
EXC12 (SH7)MII4-12
EXEL SCR
B38
B49
AACP20 (SH10)M59-12
AACP10 (SH10)M63-10
B51
OPD25 (SH31
CMODE
BIO
7474
M83
CMODH
T18FR (SH17) 3
INHCLKI
6(SH17)
M109-5
M99
WAITG
7400
B47
INHCLK (SH 17)M118-9
INDB
7402
M66
NDC52
7400
M99
INDOOI
7404
M84
WAITI
7404
M84
M100
F=B
7420
AACP2II
7404
M112
M99
GWT
7400
PROCHALT (SH7) 4
M68
NDC10
7408
TB97-2
7476
CK M65
INDOO
7476
CK M65
WAIT
7400
M45
AACP21
AACC10(SH10)
AACC11 (SH10)
OPD16(SH3)
PROCHALT (SH17)
H ⇒ INSERT
NDC12
7404
M84
NDC22
7420
M80
NDC20
M84
7404
WAITEN
7402
M115
M99
LD·EX
7400
ØPD23 H⇒ NOT JMP
(SH 3) INSTE
(SH 7) MCNIO*H ⇒ INDIRECT
(SH6) ØPF04
(SH 2)
(SH16) MDR15*L⇒ NOT INDIRECT
(SH 16) T20DR H ⇒T20
(SH7) SCR/STBI L⇒ STATE CTR CLEAR
(SH16) TURT4I H⇒ LAST ½ CYCLE
(SH 4) ØPDG15
(SH7) EXC 60
(SH 16) T14
(SH2) OPD14
(SH2) OPD08
(SH2)OPDIVO
(SH7) EXECA

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

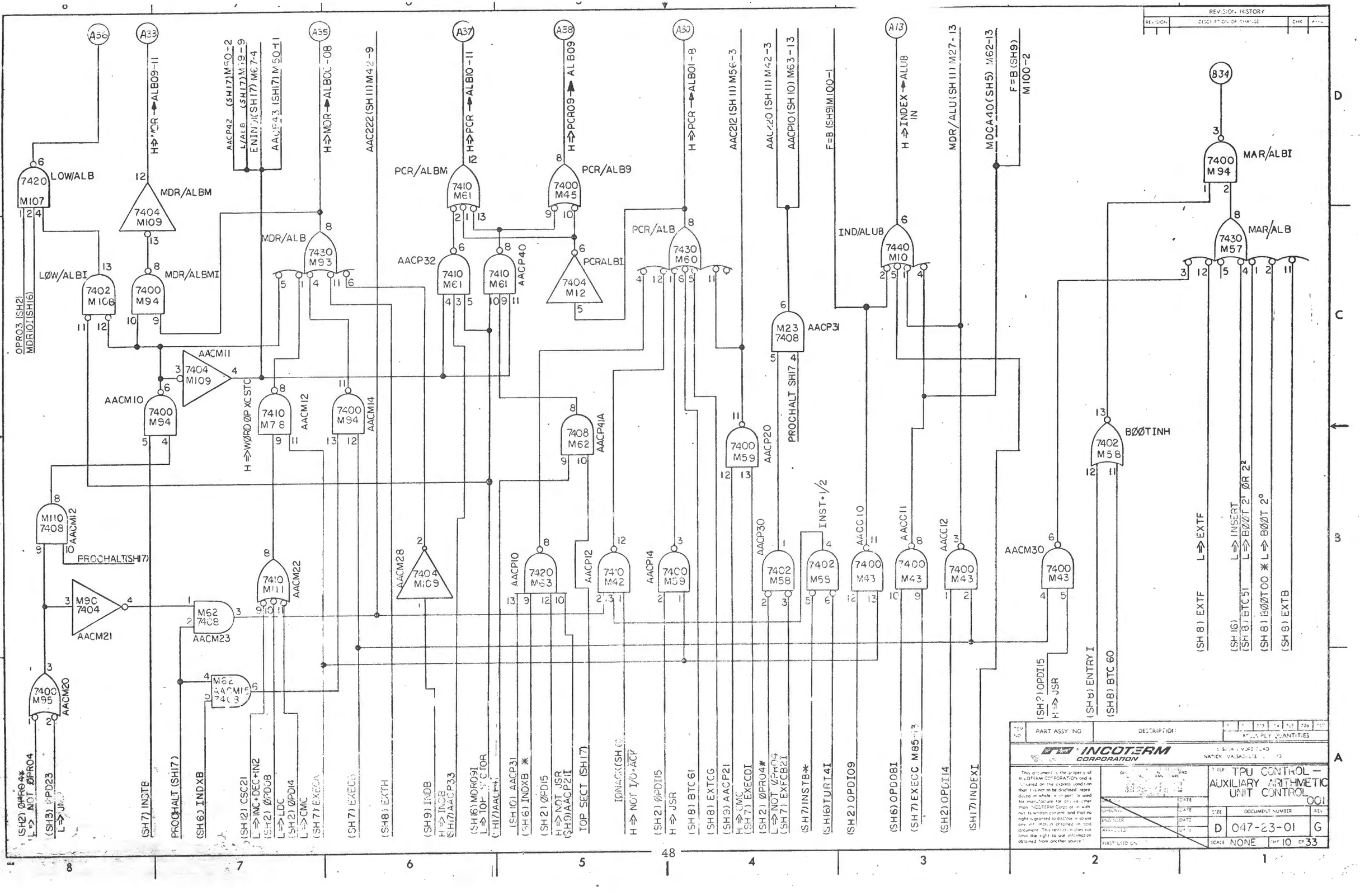
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

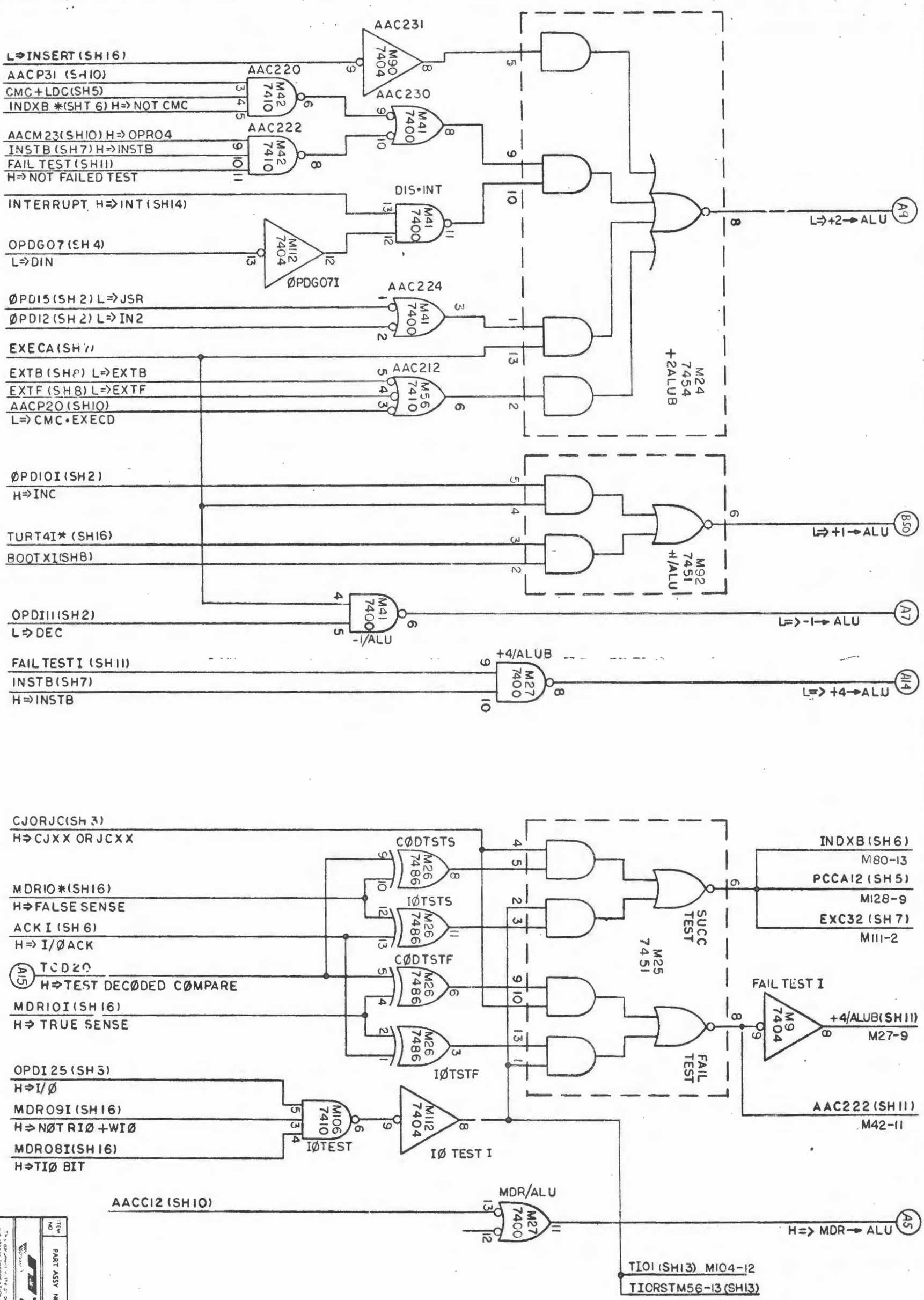
TPU CONTROL
STATE COUNTER
001

DRAWN	DATE
CHECKED	DATE
ENGINEER	DATE
APPROVED	DATE
FIRST USED ON	

SIZE	DOCUMENT NUMBER	REV
D	047-23-01	G

SCALE —— SHT 9 OF 33


A36
A33
A35
A37
A38
A30
A13
834
H⇒MDR→ALB09-11
AACP42 (SH17)M50-2
L/ALB (SH17)M19-9
ENINDX(SH17) M67-4
AACP43 (SH17) M50-11
H⇒MDR→ALB0C-08
AAC222(SH11)M42-9
H⇒PCR→ALB10-11
H⇒PCR09→ALB09
H⇒PCR→ALB01-8
AAC212(SH11)M56-3
AAC220(SH11)M42-3
AACP10(SH10)M63-13
F=B(SH9)M100-1
H⇒INDEX→ALUB IN
MDR/ALU(SH11)M27-13
MDCA40(SH5) M62-13
F=B(SH9) M100-2
7420 M107 LOW/ALB
7404 M109 MDR/ALBM
7400 M94 MDR/ALBMI
7402 M108 LØW/ALBI
7430 M93 MDR/ALB
7410 M61 PCR/ALBM
7400 M45 PCR/ALB9
7404 M12 PCRALBI
7410 M61 AACP32
7410 M61 AACP40
7430 M60 PCR/ALB
7408 M23 AACP31
PROCHALT SH17
7440 M10 IND/ALUB
7430 M57 MAR/ALB
7400 M94 MAR/ALBI
7402 M58 BØØTINH
OPRO3 (SH2)
MDR101(SH16)
AACM11
7404 M109
AACM10
7400 M94
H⇒WØRD ØP XC STC
7410 M78 AACM12
7400 M94 AACM14
7408 M62 AACP41A
7400 M59 AACP20
AACP30
INST-1/2
AACC10
AACC11
AACC12
7400 M43
AACM30
(SH8) EXTF
L⇒EXTF
(SH16) L⇒INSERT
(SH8) BTC51 L⇒BØØT 2' ØR 2²
(SH8) BØØT00 *L⇒BØØT 2°
(SH8) EXTB
(SH2) ØPDI15 H⇒JSR
(SH9) ENTRY I
(SH8) BTC 60
M110 7408 AACM12
PROCHALT(SH17)
M9C 7404 AACM21
M62 7408 AACM23
7400 M95 AACM20
7410 M11 AACM22
AACM28
7404 M109
M62 AACM15 7403
(SH2) ØAR04 *L⇒ NOT ØPRO4
(SH3) ØPD23 L⇒JSR
(SH7) INGTB
PROCHALT (SH17)
(SH6) INDXB
(SH12) CSC21 L⇒INC+DEC+IN2
(SH2) ØPDU8 L⇒LDC
(SH2) ØPDI4 L⇒CMC
(SH7) EXECU
(SH7) EXECD
(SH8) EXTH
(SH9) INDB H⇒INDB
(SH7)AACP33
(SH16) MDR09I L⇒IOP SYNCTOR
(SH17)AACP44
(SH10) AACP31
(SH16) INDXB *
(SH2) ØPDI5
H⇒NOT JSR
(SH9)AACP21I
TOP SECT (SH17)
IØNACK(SH6)
H⇒NOT I/O ACP
(SH2) ØPDI15
H⇒JSR
(SH8) BTC 61
(SH8) EXTCG
(SH9) AACP21
H⇒CMC
(SH7) EXECDI
(SH2) ØPRO4*
L⇒NOT ØPRO4
(SH7) EXFCB21
(SH7)INSTB*
(SH16)TURT4I
(SH2) OPDI09
(SH6) OPD08I
(SH7) EXECC M85-13
(SH2) OPDI14
(SH17) INDEXI
REVISION HISTORY
REVISION
DESCRIPTION OF CHANGE
CHK
APPR
PART ASSY NO
DESCRIPTION
APPLY QUANTITIES
INCOTERM CORPORATION
NATICK, MASSACHUSETTS
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corp. at in with out its written consent and that no right is granted to disclose or to use any one, matter contained in said document. This restriction does not limit the right to use information obtained from another source.
TITLE TPU CONTROL – AUXILIARY ARITHMETIC UNIT CONTROL 001
DRAWN
CHECKED
ENGINEER
APPROVED
FIRST USED ON
DATE
SIZE D
DOCUMENT NUMBER 047-23-01
REV G
SCALE NONE
SHT 10 OF 33
8
7
6
5
4
3
2
1
A
B
C
D
48



ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES
			701 702 703 704 705 706 707

INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760

TITLE: TPU CONTROL AUX. ARITHETIC UNIT CONTROL 001

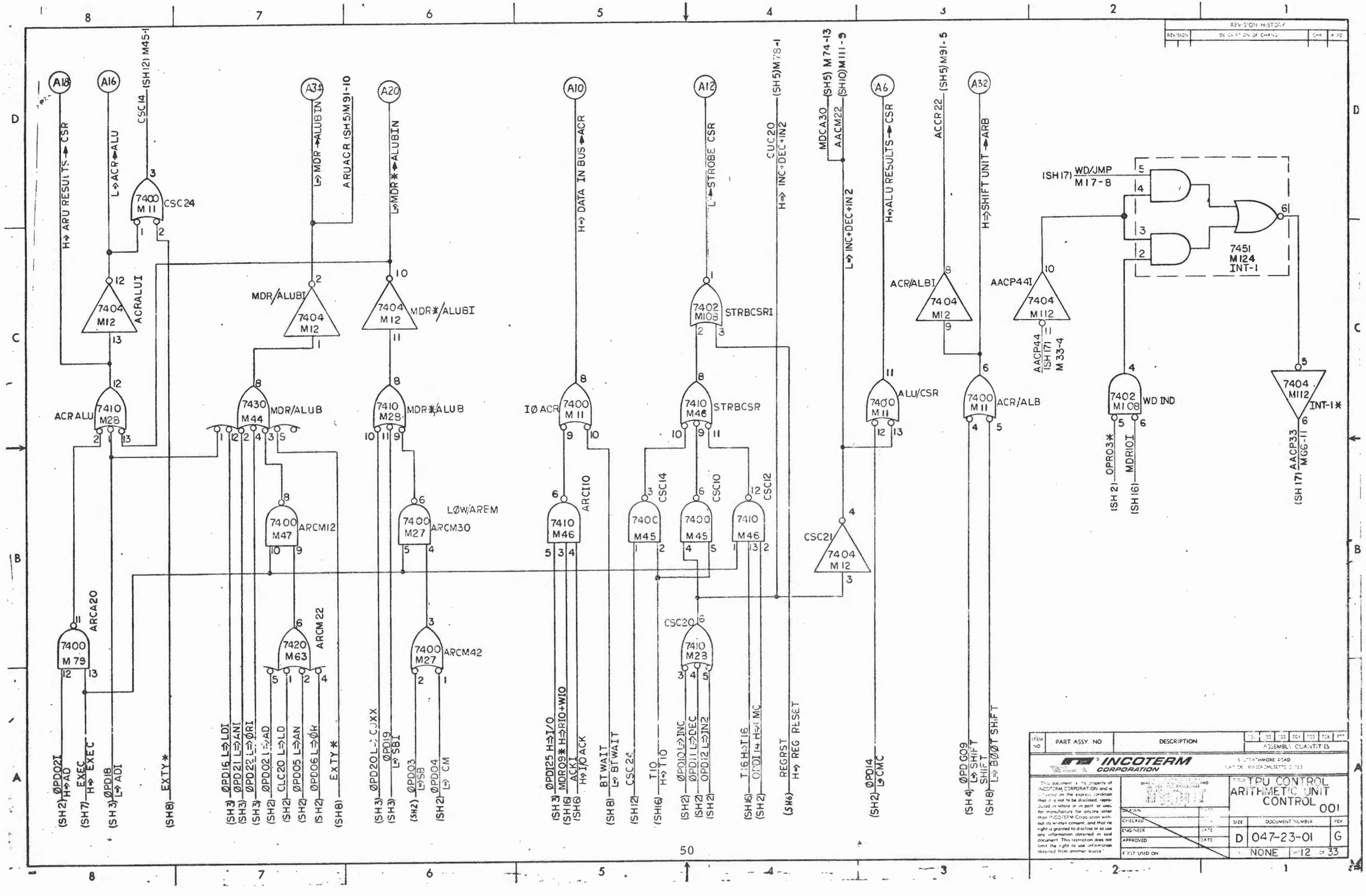
SIZE: D | DOCUMENT NUMBER: 047-23-01 | REV: G

ENG RELEASE — DATE
APPROVED — DATE
CHECKED — DATE
DRAWN — DATE

NEXT ASSY NONE | SHT 11 OF 33

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD


REVISION HISTORY
REVISION
DESCRIPTION OF CHANGE
CHK
APPD
A18
A16
A34
A20
A10
A12
A6
A32
H⇒ ARU RESULTS→CSR
L⇒ ACR→ALU
CSC14 (SH12) M45-1
7400 M11 CSC24
7404 M12 ACRALUI
7410 M28 ACRALU
MDR/ALUBI
7404 M12
7430 M44 MDR/ALUB
7400 M47 ARCM12
7420 M63 ARCM22
7400 M79 ARCA20
L⇒ MDR→ALUBIN
ARUACR (SH5) M91-10
L⇒ MDR*→ALUBIN
7404 M12 MDR*/ALUBI
7410 M28 MDR*/ALUB
7400 M27 ARCM30
LØW/AREM
7400 M27 ARCM42
H⇒ DATA IN BUS→ACR
IØ ACR
7400 M11
7410 M46 ARC110
L⇒ STROBE CSR
7402 M103 STRBCSRI
7410 M46 STRBCSR
CUC20 (SH5) M78-1
H⇒ INC+DEC*IN2
7400 M45 CSC14
7400 M45 CSC10
7410 M46 CSC12
CSC21
7404 M12
CSC20
7410 M23
MDCA30 (SH5) M74-13
AACM22 (SH10) M111-9
L⇒ INC+DEC+IN2
H⇒ ALU RESULTS→CSR
ALU/CSR
7400 M11
ACCR22 (SH5) M91-5
ACR/ALBI
7404 M12
H⇒ SHIFT UNIT→ARB
7400 M11 ACR/ALB
(SH17) WD/JMP M17-8
AACP44I
7404 M112
AACP44 (SH17) M33-4
7451 M124 INT-1
7402 M108 WD IND
7404 M112 INT-1*
(SH17) AACP33 M66-11
(SH2) ØPD02I H⇒AD
(SH7) EXEC H⇒ EXEC
(SH3) ØPD18 L⇒ ADI
(SH8) EXTY*
(SH3) ØPD16 L⇒LDI
(SH3) ØPD21 L⇒ANI
(SH3) ØPD22 L⇒ØRI
(SH3) ØPD02 L⇒AD
(SH2) CLC20 L⇒LD
(SH2) ØPD05 L⇒AN
(SH2) ØPD06 L⇒ØR
(SH2) EXTY*
(SH3) ØPD20 L⇒CJXX
(SH3) ØPD19 L⇒SBI
(SH2) ØPD03 L⇒SB
(SH2) ØPD04 L⇒CM
(SH3) ØPD25 H⇒I/O
(SH16) MDR09* H⇒RIO+WIO
(SH6) ACKI H⇒I/O ACK
(SH8) BT WAIT L⇒ BTWAIT
(SH12) CSC24
(SH16) T10 H⇒T10
(SH2) ØPD10 L⇒INC
(SH2) ØPD11 L⇒DEC
(SH2) ØPD12 L⇒IN2
(SH16) T16 H⇒T16
(SH2) ØPD114 H⇒I MC
(SH6) REGRST H⇒ REG RESET
(SH2) ØPD14 L⇒CMC
(SH4) ØPD G09 L⇒ SHIFT
SHIFT
(SH8) BØØT SHIFT
(SH2) OPR03*
(SH16) MDRIOI
ITEM NO
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760
TPU CONTROL ARITHMETIC UNIT CONTROL 001
DRAWN
CHECKED
ENGINEER
APPROVED
FIRST USED ON
SIZE
DOCUMENT NUMBER
REV
D
047-23-01
G
NONE
SHEET 12 OF 33
50

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

B16 — L⇒ RTC+INT+SEL PROP

INTENCO SH17 M20-2 — 7402 M103 INTRTC

B76 — L⇒ ACK TO I/O BUS

B31

AT K1 (SH 6) M19-11

E.NENC1 (SH17) M19-3 — 7404 M39 TIORTCI

B73

RTCSELI — M102 7404

RTCINT — 7400 M104

7400 M104 RTCINT *

AUTOINT — 7402 M103

RTCSEL — 7402 M103

7400 M104 SETRTCINT

74126 M40 AKDRTC

7400 M120 CLRRTCI

TACK — 74126 M40

74126 M40 T102

TB97-8 INHIBIT RTC SWITCH

7400 M120 CLRRTC

7400 M120 RTC10

7400 M104 T101

7402 M103 TIORTC

7410 M56 TIORST

CONTI5I — M102 7404

7402 M88 RTCINTEN

7476 M72 RTCMSK

7476 M72 RTCRDY

B43

CITDS — 7402 M88

UNMRTC — 7402 M88

7402 M88 MSKRTC

7402 M85 READRTC

7474 M29 RTCFF

CIADD — 7400 M120

FUNCO3(SH 16)

INTSEL * (SH 14) L⇒ INT SELECT

FUNCOO (SH 16) L⇒ I/O FUN 2°

T10 (SH 16) H⇒ T10

FUNCOI(SH16) L⇒ I/O FUN 2'

RTC L⇒ RTC

B6

MDRO8*(SH 16)

INTSEL (SH 14) H⇒ INT SELECT

ADDI5 (SHI5)

MDRO9I (SH 16) L⇒ I/O TYPE 2'

T2 (SH 16)

RESET (SH 6) L⇒I/O RESET

IOTESTI(SHII)

MDRO4* (SH16)

INTPI(SH17)

MDRO5* (SH16)

ITEM NO	PART/ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION — 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE: DECIMALS .XX ±.01, .XXX ±.005; FRACTIONS ±1/64; ANGLES ±1°

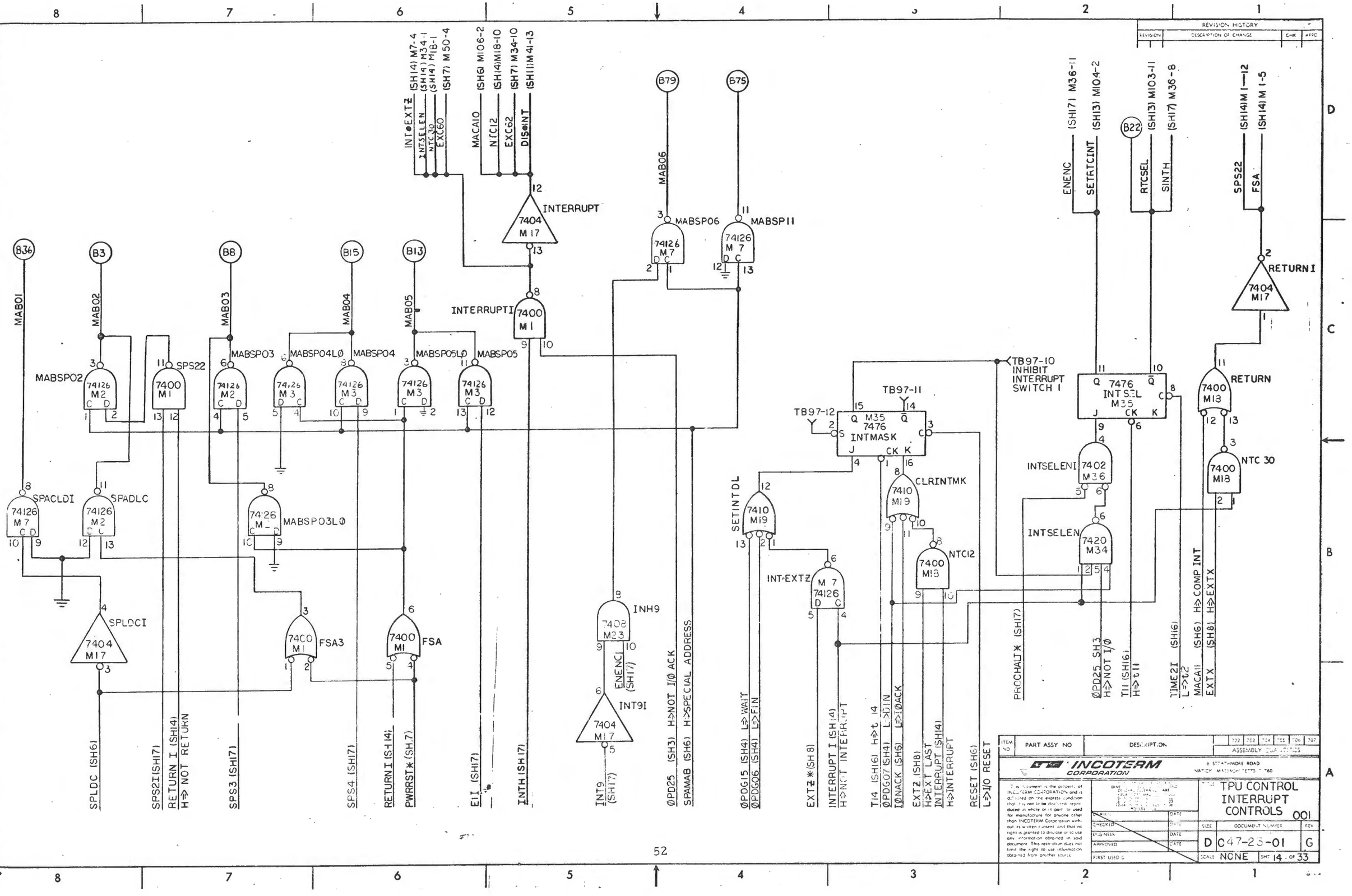
DRAWN	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

TITLE: TPU CONTROL REAL TIME CLOCK MODULE 001

SIZE	DOCUMENT NUMBER	REV
D	047-23-01	G

SCALE NONE SHT 13 OF 33

51



This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

READRTC (SH 13) M85-3
AUTO INT M 103-8 (SH.13)
TIORTC (SH13)- M103-2
SINDF (SH17) M66-3
CONTISI (SHI3) M102-11

A40 A44 A40 B55 A47 A49 A51 A53 A57 A59 A61 A63 A71 A65

17 16 15 14 13 11 10 9 8 7 6 5 4 3 2 1

ADD15 ADD14 ADD13 ADD12 ADD11 ADD10 ADD09 ADD08 ADD07 ADD06 ADD05 ADD04 ADD03 ADD02 ADD01 ADD00

SN74154
CØNT00-15
M13

12 — ⏚
24 — o +5VDC

ENABLE A3 A2 A1 A0

19 18 20 21 22 23

OPD25(SH3)
CLROPR (SH2)
EXEC (SH7) 2
BYPASS(SH5) 3

7474 ADRH M123
S D Q CK
4 5

MDR03*(SH 4)
MDR02*(SH 4)
MDR01*(SH 4)
MDR00*(SH 4)

ITEM NO	PART/ASSY. NO.	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
4 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

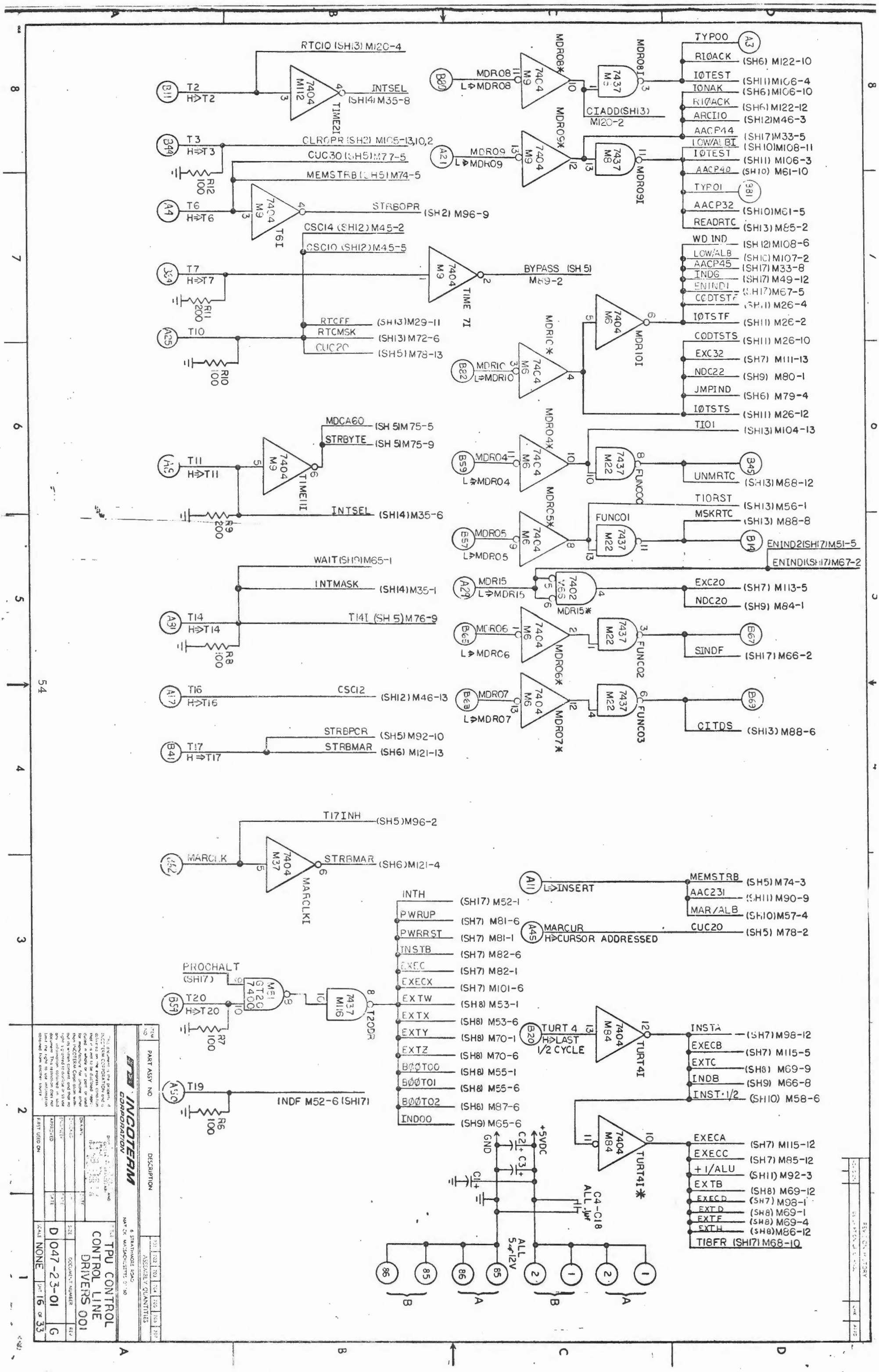
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
3 PLACE DEC. MFG. ±.005
2 PLACE DEC. ±.01
FRACTIONS ± 1/64
ANGLES ± 1°

TITLE: TPU CONTROL DECODER & WIRER OPTION MATRIX 001

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	047-23-01	G
ENGINEER	DATE			
APPROVED	DATE	SCALE NONE	SHT 15 OF 33	
FIRST USED ON				

8 7 6 5 4 3 2 1


RTC10 (SH13) MI20-4
T2
H⇒T2
7404 M112
INTSEL
(SH14) M35-8
TIME21
T3
H⇒T3
CLROPR (SH2) MI05-13,10,2
CUC30 (SH5) M77-5
MEMSTRB (SH5) M74-5
R12 100
T6
H⇒T6
7404 M9
STRBOPR (SH2) M96-9
T6I
CSCI4 (SHI2) M45-2
CSCI0 (SHI2) M45-5
T7
H⇒T7
BYPASS (SH 5)
M89-2
TIME 7I
R11 200
RTCFF (SH13) M29-11
RTCMSK (SH13) M72-6
CUC20 (SH5) M78-13
TI0
R10 100
MDCA60 (SH 5) M75-5
STRBYTE (SH 5) M75-9
T11
H⇒T11
TIMEIII
INTSEL (SH14) M35-6
R9 200
WAIT (SH9) M65-1
INTMASK (SH14) M35-1
T14
H⇒T14
T14I (SH 5) M76-9
R8 100
TI6
H⇒TI6
CSCI2 (SHI2) M46-13
STRBPCR (SH5) M92-10
STRBMAR (SH6) MI21-13
TI7
H⇒TI7
T17INH (SH5) M96-2
MARCLK
STRBMAR (SH6) MI21-4
MARCLKI
R6 100
INDF M52-6 (SHI7)
PROCHALT (SHI7)
T20
H⇒T20
M51 GT20 7400
7437 MI16
T20DR
R7 100
INTH (SHI7) M52-1
PWRUP (SH7) M81-6
PWRRST (SH7) M81-1
INSTB (SH7) M82-6
EXEC (SH7) M82-1
EXECX (SH7) MI01-6
EXTW (SH8) M53-1
EXTX (SH8) M53-6
EXTY (SH8) M70-1
EXTZ (SH8) M70-6
BØØTC0 (SH8) M55-1
BØØTO1 (SH8) M55-6
BØØTO2 (SH6) M87-6
INDO0 (SH9) M65-6
MDR08
L⇒MDR08
7404 M9
MDR08*
7437 M8
MDR08I
CIADD (SHI3) MI20-2
MDR09
L⇒MDR09
MDR09*
MDR09I
TYP00
RIØACK (SH6) M122-10
IØTEST (SHII) MI06-4
IONAK (SH6) MI06-10
RIØACK (SH6) M122-12
ARCII0 (SHI2) M46-3
AACP44 (SHI7) M33-5
LOW/ALBI (SHI0) MI08-11
IØTEST (SHII) MI06-3
AACP40 (SHI0) M61-10
TYP01
AACP32 (SHI0) M61-5
READRTC (SHI3) M85-2
WD IND (SHI2) MI08-6
LOW/ALB (SHIC) MI07-2
AACP45 (SHI7) M33-8
INDG (SHI7) M49-12
ENINDI (SHI7) M67-5
CØDTSTF (SHII) M26-4
IØTSTF (SHII) M26-2
CØDTSTS (SHII) M26-10
EXC32 (SH7) MIII-13
NDC22 (SH9) M80-1
JMPIND (SH6) M79-4
IØTSTS (SHII) M26-12
MDRIC
L⇒MDRIC
MDRIC*
MDRIOI
TI01 (SHI3) MI04-13
MDR04
L⇒MDR04
MDR04*
UNMRTC (SHI3) M88-12
TIORST (SHI3) M56-1
MDR05
L⇒MDR05
MDRC5*
MSKRTC (SHI3) M88-8
ENIND2 (SHI7) M51-5
ENINDI (SHI7) M67-2
MDR15
L⇒MDR15
MDR15*
EXC20 (SH7) MII3-5
NDC20 (SH9) M84-1
MDR06
L⇒MDRC6
MDR06*
SINDF (SHI7) M66-2
MDR07
L⇒MDR07
MDR07*
CITDS (SHI3) M88-6
All
L⇒INSERT
MEMSTRB (SH5) M74-3
AAC23I (SHII) M90-9
MAR/ALB (SHI0) M57-4
A45
MARCUR
H⇒CURSOR ADDRESSED
CUC20 (SH5) M78-2
TURT 4
H⇒LAST 1/2 CYCLE
TURT4I
INSTA (SH7) M98-12
EXECB (SH7) MII5-5
EXTC (SH8) M69-9
INDB (SH9) M66-8
INST·1/2 (SHI0) M58-6
TURT4I*
EXECA (SH7) MII5-12
EXECC (SH7) M85-12
+1/ALU (SHII) M92-3
EXTB (SH8) M69-12
EXECD (SH7) M98-1
EXTD (SH8) M69-1
EXTE (SH8) M69-4
EXTH (SH8) M86-12
TI8FR (SHI7) M68-10
+5VDC
GND
C2 C3 C1
C4-C18 ALL .1μf
ALL 5-12V
INCOTERM CORPORATION
TPU CONTROL LINE DRIVERS 001
047-23-01
G
SCALE NONE
SHT 16 OF 33
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
FIRST USED ON

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

FUNC02 (SH16) 2
ADD 15 (SH15) 3
SINDF 7402 M66
T19 (SH16) 6
7476 M52 INDF
SCRRSTBI (SH7)
INDEX 7402 M36
OPR04#(SH2) 12
OPD23 (SH3) 13
RINDFI 7400 M51
INDEXI 7404 M37
RINDF 7400 M51
IND/ALUB (SH10) M10-5
CMODH* (SH9)
INHCLKI M109 7404
MEMSTRB, M74-4 (SH.5)
GWT (SH.9)
INHCLK M118 7400
T17INH, M96-3 (SH-5)
GWT, M99-13 (SH.9)
GT20 ; M51-9 (SH.8)
AACMI5, M62-4 (SH.10)
EXTCG, M59-5 (SH.8)
AACP31 (SH10) M23-4
NDC10 (SH 9) M68-4
AACM23 (SH10) M62-2
PHEN (SH 3) M47-4
GSTOPR (SH2) M110-12
AACMI2 (SH10) M110-10
CPD00-15 (SH2) M32-19
OPDG00-15 (SH4) M15-19
INTSELENI (SH14) M36-5
+5VO
R13 1K
OPD25 (SH3)
HALT B5
(SH7) CPI88
(SH16) TURT4I*
M68 T18FR 7408
7474 CK M83 PROCHALT
CMODH (SH9) M83-3
MDRIOI (SH16) 5
INDB (SH9) 3
ENINDI M67 7451
ENIND 7408 M68
MDR5 (SH16)
INDXB (SH6) 4 5
ENIND2 7400 M51
SPS22 (SH14) M1-13
SPS2I 7404 M37
M2-5 MABSP03 (SH14)
M3-9 MABSP04 (SH14)
SPS2 7408 M21
SPS3 7408 M21
SPS4 7408 M21
INT 6 B39 INT 7 B37 INT 8 B35 INT 9 B33 INT A B24 INT B B26 INT C B28 INT D B30
+5V M4 1K
74148 M5 INTENCI
MARSP05 (SH14) M3-12
INT9I, M17-5 (SH. 14)
EII 7404 M37
ENCIEN
INT 1 B27 INT 2 B19 INT 3 B21 INT 4 B23 INT 5 B25
INTRTC (SH13)
+5V M4 1K
74148 M20 INTENCO
INDG 7400 M49
MDRIOI (SH16) M43
L/ALB 7400 M49
A52
INT-1* (SH12)
INTSEL (SH14) 11 ENENC 7402 M36 13
AACP33 7402 M66
13 AACP32 (SH10) M61-3
A60 TCP SECT H⇒ CURRENT SECTOR IS NOT TOP
AACP41A (SH10) M62-10
AACP43 7410 M50
AACM11 (SH10)
(SH2) OPR03*11
(SH3) OPD23I 12
7402 M33 WD/JMP*
WD/JMP 7404 M17
INT-1 (SH12) M124-5
INTP 7408 M21
INTPI M37 7404
TACK, M40-5 (SH 13)
EXTX (SH8)
ENENC2 7400 M18
TIORTCI (SH13) 3
I/O NACK (SH 6) 4 5
ENENCI 7410 M19
INH9 (SH14) M23-10
INTERRUPTI (SH14) M1-9
AACP41 7400 M49
6 AACP41A (SH10) M62-9
AACP42 7410 M50
AACP44 7402 M33
MDR09* (SH16) 5
MDR00* (SH4) 6
AACP441 (SH12) M112-11
AACP45
INTPI I 7404 M37
SINTH 7402 M36
INTSEL* (SH14) 8
T20DR (SH16) L
7476 M52 INTH.
EXTZ (SH8) 16
REGRSTI (SH6)
OPR03 (SH21) 2
7400 M49 AACP46
OPD23I 2 (SH 31)
INHPCR 7402 M33

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION — 6 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

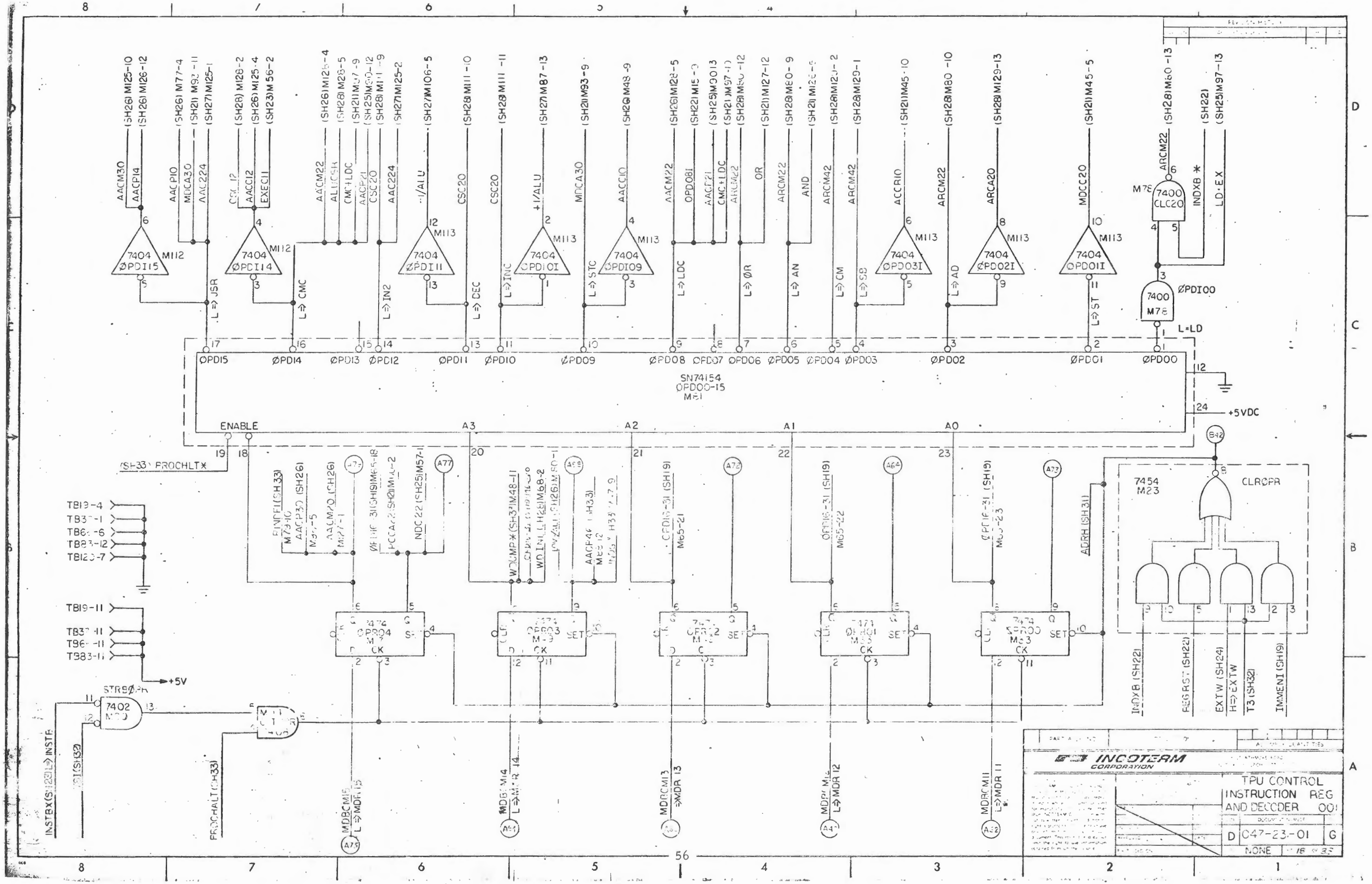
DRAWN	DATE
CHECKED	DATE
ENGINEER	DATE
APPROVED	DATE

NEXT USED ON 005-07-02-701

TITLE: TPU CONTROL INTERRUPT LOGIC -001

SIZE	DOCUMENT NUMBER	REV
D	047-23-01	G

SCALE — SHT 17 OF 33


7404 ØPDI15 M112
7404 ØPDI14 M112
7404 ØPDI13 M113
7404 ØPDI12 M113
7404 ØPDI11 M113
7404 ØPDI10 M113
7404 ØPDI09 M113
7404 ØPDI08 M113
7404 ØPDI07 M113
7404 ØPDI06 M113
7404 ØPDI05 M113
7404 ØPDI04 M113
7404 ØPDI03 M113
7404 ØPDI02 M113
7404 ØPDI01 M113
7404 ØPDI00 M113
7400 CLC20
7400 M78
L⇒JSR
L⇒CMC
L⇒IN2
L⇒DEC
L⇒INC
L⇒STC
L⇒LDC
L⇒ØR
L⇒AN
L⇒CM
L⇒SB
L⇒AD
L⇒ST
L=LD
ØPDI00
ØPDI15 ØPDI14 ØPDI13 ØPDI12 ØPDI11 ØPDI10 ØPDI09 ØPDI08 ØPDI07 ØPDI06 ØPDI05 ØPDI04 ØPDI03 ØPDI02 ØPDI01 ØPDI00
SN74154 ØPDI00-15 M81
ENABLE
A3
A2
A1
A0
+5VDC
(SH33) PROCHLT*
TB19-4
TB19-11
+5V
STRBØ*
7402 M33
INSTB (SH32) L⇒ INSTB
PROCHALT (SH33)
7454 M23
CLRØPR
INDXB (SH22)
REGRST (SH22)
EXTW (SH24)
H⇒EXTW
T3 (SH32)
IMMEN1 (SH19)
INCOTERM CORPORATION
TPU CONTROL INSTRUCTION REG AND DECODER 001
D 047-23-01 G
NONE

(SH23)INSTB
(SH 33)PROCHALT
M25 PHEN 7420
IMMENI
7404 M52
CLROPR
(SH18)M23-3
ENABLE
ØPD3
ØPD30
ØPD29
ØPD28
ØPD27
ØPD26
ØPD25
ØPD24
ØPD23
ØPD22
ØPD21
ØPD20
ØPD19
ØPD18
ØPD17
ØPD16
OPRO4 (SH18)
H⇒ OPRO4
ØPRO3* (SH18)
H->ØPRO3
ØPRO2* (SH18)
H⇒ØPRO2
ØPRO1* (SH18)
H⇒ØPRO1
ØPROO* (SH18)
H⇒ØPROO
ACC R22
(SH20M 77-12
7404 M12
H =>XØR
ATTENTION
7404 M72
IØTEST
(SH27)M27-13
ARCI IO
(SH28)M 59-9
RIØACK
(SH22)M 28-10
IØNACK(SH 22) M27-4
7404 M112
INTSELEN
(SH30)M85-1
L=>I/O
INTERRUPT I
(SH30)M 53-2
CONTOO-15
M16-18
(SH31)
CM DH M99-4
(SH25)
PROCHALT
(SH33)M 14-10
XPD 00-15
(SH20)M34-18
L=>GENERIC
INHPCR
(SH33)M102-3
JMPI.D
(SH22)M121-1
ENIND2
(SH33)M93-13
ØPD23I
AACM20
(SH26)M127-2
L=>JMP
NDC22
(SH25)M57-5
WD/JMP*(SH33)
M48-12
EXC32
(SH23)M26-5
RINDFI
(SH33)M79-9
MDR/ALUB
(SH28)M 95 11
L=> ØRI
OR
(SH21)M127-13
MDR/ALUB
(SH28)M95-2
L=>ANI
AND
(SH21)M126-4
MDRX/ALUB
(SH28)M111-3
L=>CJXX
MDRX/ALUB
(SH28)M111-4
ACCR22
(SH21)M 77-13
L=>SBI
MDR/ALUB
(SH28)M95-5
L=>ADI
ACRALU (SH28)M111-1
CJØRJC
7400 M44
FAIL TEST
(SH27)M91-10
L=>JCXX
SUCC TEST (SH27) M91-4
MDR/ALUB
(SH28)M95-1
L=>LDI
F=B (SH25)M92-4
+5VDC
ME5
SN74154
ØPD16-31

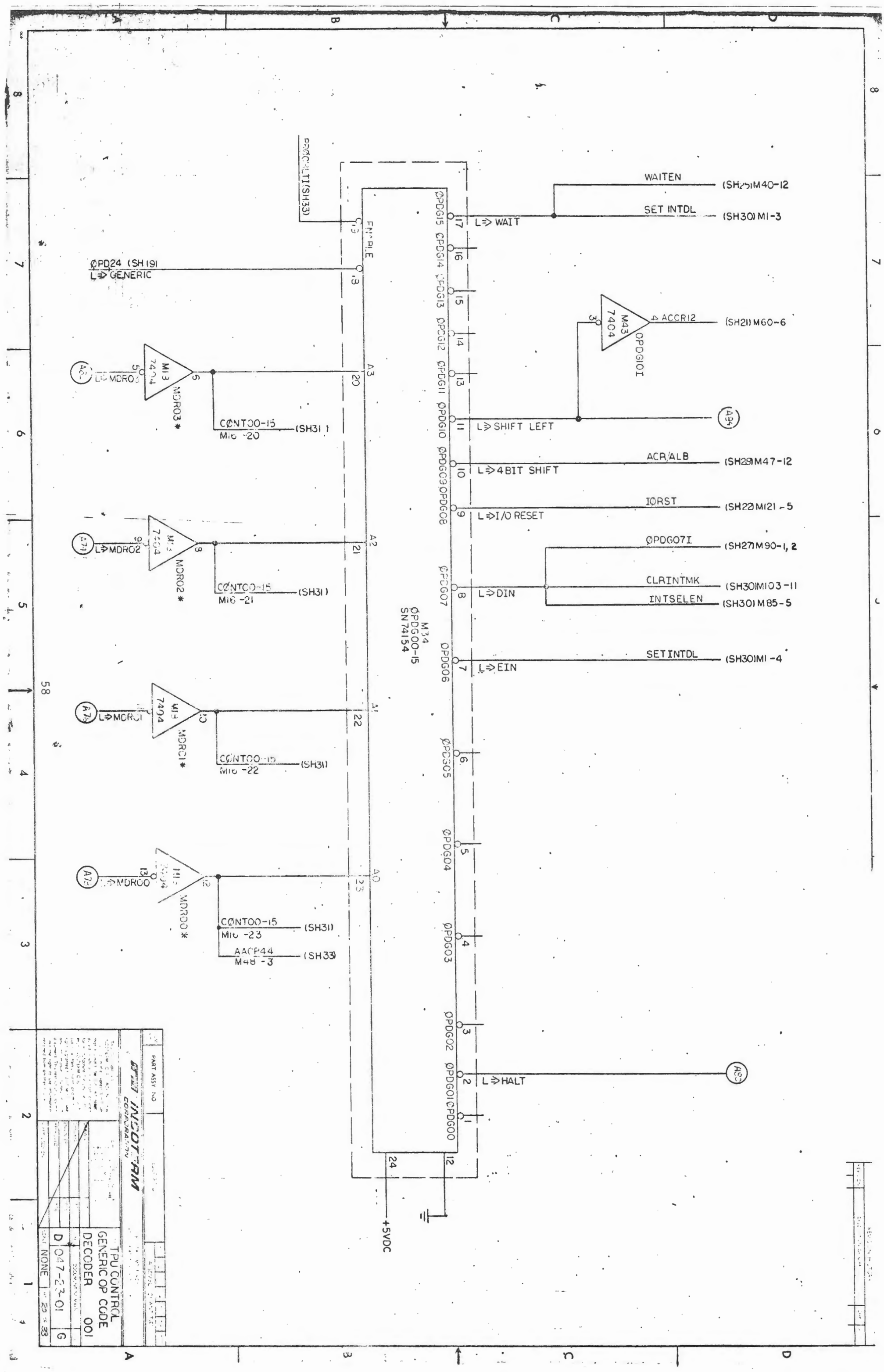
ITEM	PART ASSY NO	DESCRIPTION	QTY

INCOTERM CORPORATION

TPU- CONTROL — INSTRUCTION REG AND DECODER 001

SIZE	DOCUMENT NUMBER	REV
D	047-22-01	G

SCALE NONE


PROCALTI (SH33)
ØPD24 (SH19)
L⇒GENERIC
ENABLE
ØPDG15
ØPDG14
ØPDG13
ØPDG12
ØPDG11
ØPDG10
ØPDG09
ØPDG08
ØPDG07
ØPDG06
ØPDG05
ØPDG04
ØPDG03
ØPDG02
ØPDG01
ØPDG00
WAITEN
(SH25) M40-12
SET INTDL
(SH30) M1-3
L⇒WAIT
M43
7404
ØPDG10I
ACCR12
(SH21) M60-6
L⇒SHIFT LEFT
ACR/ALB
(SH29) M47-12
L⇒4BIT SHIFT
IØRST
(SH22) M121-5
L⇒I/O RESET
ØPDG07I
(SH27) M90-1, 2
CLRINTMK
(SH30) M103-11
L⇒DIN
INTSELEN
(SH30) M85-5
SETINTDL
(SH30) M1-4
L⇒EIN
M34
ØPDG00-15
SN74154
M13
7404
MDRO3*
L⇒MDRO3
CØNTØØ-15
M16-20
(SH31)
MDRO2*
L⇒MDRO2
CØNTØØ-15
M16-21
(SH31)
MDRO1*
L⇒MDRO1
CØNTØØ-15
M16-22
(SH31)
MDRO0*
L⇒MDRO0
CØNTØØ-15
M16-23
(SH31)
AACP44
M48-3
(SH33)
L⇒HALT
+5VDC
A3
A2
A1
A0
58
PART ASSY NO
GENERAL INSTRUMENT CORPORATION
TPU CONTROL
GENERIC OP CODE
DECODER 001
D
047-2301
G
NONE
SHEET 29 OF 33

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APVD

EXC22 (SH 23) M42-4
L⇒AAR→PCR
4
ALUPCRI
7404 M109
3
MACAIO (SH 22) M73-4
EXC62 (SH 23) M57-9
EXC60 (SH 23) M73-13
A28
H⇒ALU-PCR
A26
L⇒STROBE PCR
8
7451 M61 STRBPCR
13 1 9 10
T17 SH32
STRBMAR (SH 22) M39-3
ACCS12 (SH 22) M121-10
H⇒ARU→ACR
STRBACRL (SH 22) M89-12
12
ARUACRI
7404 M108
13
8
ARUACR
7420 M7C
12 10 13 9
L⇒STROBE INDEX REG
A43
STRBMDR (SH 21) M14-2
B53
F=A
10
7404 M108
MEMSTRBI
11
12
MEMSTRB
7410 M59
13 2 1
A23
L⇒ACR→MDR
A27
H⇒STROBE MDR BYTE
10
STRBBYTE
7402 M14
8 9
E71
CLKMDR (SH 24) M9-5
11
L⇒ALU→MDR
7400 M13 ALUMDB
12 13
A22
L⇒AND SELECT TO ALU
A24
L⇒OR SELECT TO ALU
A31
L⇒STROBE MDR 00-11
3
7400 M29 ACRMDB
2
8
MDCC10
7410 M31
9 10 11
MDCC20
7400 M45
5 4
MDCAIO
8
7400 M29
9 10
3
7400 M45
MDCA20
2 1
8
7410 M30
MDCA30
ADRH (SH 31)
6
BYPASS
7400 M29
4 5
11
7400 M23
12 13
BYPASS*
T14I
2
7404 M69
T14 (SH 32)
8
ANDI
7404 M109
9
3
7408 M32
MDCA40
AND
6
7400 M126
5 4
10
ORI
7404 M109
11
7400 M127
OR
12 13
1
7402 M14
STRBMDR
2 3
4
7402 M14
MDCA60
5 6
TIMEII (SH 32)
MEMSTRBI (SH 21)
CLKMDRI (SH 24)
OPD09 (SH 18) L⇒STC
CSC21 (SH 28) L⇒INC+DEC+IN2
ØPD15 (SH 18) L⇒JSR EXTC (SH 24)
AACCII (SH 26)
ØPDC5 (SH 18) L⇒AN
ØPD21 (SH 19) L⇒ANI
ØPD06 (SH 18) L⇒ØR
ØPD22 (SH 19) L⇒ØRI
TIMEII (SH 32)
INSTB* (SH 23)
ØPR04* (SH 18) L⇒ØPR04
EXECB (SH 23)
EXC20 (SH 23)
AAC220 (SH 22) M107-1
OPD14 (SH 18)
OPD08I (SH 18)
SUCCTEST (SH 27) H⇒NOT SUCCESSFUL TEST M11-6 (SH 27)
H⇒NOT JMP IND JMPIND (SH 22)
H⇒NOT ID ACK IØNACK (SH 22)
EXTH (SH 24)
EXECD (SH 23)
REGRST (SH 22) H⇒REG RESET
EXECA (SH 23) M86-1
ØPDO3I (SH 18) H⇒SB
MARCLKI (SH 32)
INHCLK (SH 33)
MDR ARBI (SH 28)
OPDGIOI (SH 20)
ØPD26 (SH 19) L⇒XOR
ØPD19 (SH 19) L⇒SHI
RIØACK (SH 22) L⇒RIO-ACK
ACR ALBI (SH 28) L⇒BT SHIFT+SHIFT
BT WAIT (SH 24) L⇒BT WAIT
ALUPCR
7420 M76
1 4 2 5
6
PCCAIO
7410 M31
5 3 4
PCCAI2
7420 M92
13 9 12 10
PCCA22
7402 M80
1 2
CMC+LDC
7408 M97
6 5
ACCR10
8
7400 M45
9 10
TI7INH
7402 M56
11 12
13
ACCR12
4
7402 M40
6 5
ACCR22
8
7420 M77
12 13 9 10
CUCI2
7400 M15
1 2
3
7410 M32
CUC20
9 10 11
8
7400 M15
CUC30
4 5
6
7400 M15
STRBIR
12 13
11
INHCLKI (SH 33)
INSERTI (SH 32) H⇒NOT INSERT
MARCUR (SH 32)
CSC20 (SH 28)
TIOI (SH 32)
OPD08I (SH 22)
T6 (SH 32) H⇒T6
EXECA (SH 23)

PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760

TPU CONTROL MISCELLANEOUS CONTROL 001

SIZE	DOCUMENT NUMBER	REV
D	047-23-01	G

DRAWN DATE
CHK'D DATE
APPROVED DATE
MATL NONE
SHEET 21 OF 33

SPLDCI (SH30) M52-11

EXECF (SH23)
AACCII (SH26)
MI3-5
OPD08 (SH18
M56-3 EXECII (SH23)
MI5-4 CUC30 (SH21)
AARPCR (SH21) H => COMPLETE
EXTZ ≠ (SH24) H => NOT EXTZ
INTERRUPT (SH30) H => INTERRUPT

7400 M104 — SPLDC
7400 MI15 (PD08I)
7410 M73 — MACAI0

FSA3 SH30I
MACAII
7402 M74
7402 M74
7402 M74

RETURN (SH30) M53-4

7440 MI06 — ALU/MAB
L ⇒ INHIBIT ALU → MAB
MABSP02 (SH30) M3-1
MABSP03 (SH30) M3-4
MABSP04 (SH30) M4-4
MABSP05 (SH30) M4-10
MABSP06 (SH30) MI0-1
MABSPII (SH30) MI0-13

EXTD (SH24) L => EXTD

7420 M122 — SPAMAB
8 H ⇒ SPECIAL ADDRESS → MAB

ARUACRI (SH21)

7402 M83 — STRBACRL
H ⇒ STROBE ACR0-3 (B74)

ARUACR (SH21)
L ⇒ BTWAITB (SH24)

7400 M121 — ACCS2
7402 M83 — STRBACRM
H ⇒ STROBE ACR4-7 (B74)

PWRRST * (SH23) ⇒ PROG START
SUCCTEST (SH27)
L ⇒ SUCCESSFUL TEST

7420 M122 — INDXB
7400 M23 — INDXB *

AACMI5 (SH26) M97-5
ENTND2 (SH33) M93-2
CLRØPR (SH18) M23-9
EXC20 (SH23) M26-13

INSTA (SH23) L ⇒ INSTA

CLC20 (SH18) M78-5
AAC220 (SH27) MI07-13
AACPI0 (SH26) M77-1

ØPD23I (SH19) H ⇒ JMP
MDRI0 * (SH32) H => INDIRECT

7400 M121 — JMPIND

PCCAI2 (SH21) M02-12
L ⇒ JMP INDIRECT

MDR09 * (SH32) H => RIO + WIO
ACKII (SH22) H => NOT I/O ACKNOWLEDGE
ØPDI25 (SH19) H => I/Ø

7410 M27 — IØNACK

CLRINTMK (SH30) MI03-9
XTCI0 (SH24) M25-12
PCCAI2 (SH21) M02-10
AACPI2 (SH26) M93-3
EXC22 (SH23) M42-1
ENENCI (SH33) M73-9
L ⇒ (RIO + WIO) $\overline{ACK}$

ACKI (SH22) H => I/O ACKNOWLEDGE
MDR08I (SH32 H => TYPE 2⁰

7420 M29 — RIØACK
ACCR22 (SH21) M77-9
L ⇒ RIO • ACK

IØTSTS (SH27) M75-5
IØTSTF (SH27) M75-13
RIØACK (SH22) M29-9
ARCII0 (SH28) M59-10
BTC24 (SH24) M70-3

AKDRTC (SH29) L ⇒ ACK FROM I/Ø BUS

7404 MI05 — ACKI
H ⇒ I/O ACKNOWLEDGE

R1 320Ω ¼W
+5V
R2 320Ω ¼W

7404 MI05 — ACKII
IØNACK (SH22) M27-5
L ⇒ I/O ACKNOWLEDGE

(E7C) L ⇒ BOOT FROM I/Ø BUS

7404 MI05 — BOOTI
H ⇒ BOOT
BTCI2 (SH24) M41-12
BTC60 (SH24) M56-8

BØØTII
7404 MI05
STRBMAR (SH22) M39-2
BTCI4 (SH24) M70-6
L ⇒ BOOT

(B53) CONSOLE RESET

ENTRY (SH24)
L ⇒ BOOT ENTRY
PWRRST * (SH23)
L ⇒ PWR RESET

7400 M121 — REGRST
H ⇒ REG RESET
CLRØPR (SH18) M23-5
STRBMAR (SH22) M39-1
STRBPCR (SH21) M61-9
STRBCSRI (SH28) MC0-8

7404 MI05 — REGRSTI
INTH (SH33)

IØRST
7400 M121

ØPDØOB (SH20)
L ⇒ RESET I/O

7437 M89 — RESET
L ⇒ RESET TO I/O BUS (C69)
INTMASK (SH30) M98-3
CLRRTC (SH29) MI00-9
RTCMSK (SH29) MII5-3

BOOTXI (SH24)
MARCLK (SH32)
TI7 (SH32) H ⇒ TI7
REGRST (SH22)
TI7INH (SH21)
BOOTII (SH22)

7454 M39 STRBMAR
L ⇒ STROBE MAR (B69)

D	C47-23-01	G	
NONE			

TPU CONTROL — MISCELLANEOUS CONTROL CCI

SPT INCOTERM CORPORATION

+12V

A41 A42

R3 680

R4 220

7404 M109 — PWRUPG

ENTGPWR

ENTRY I(SH24)
H⇒ENTRY

7410 M103

B4

CP188

TI8 FR(SH33)M38-9

7476 M36 PWRUP

7404 M108 — PWRESET

L⇒POWER UP — B66

TB83-10

7400 M104 — SCRRST

7427 M68 — SCRRSTBI

INDE — (SH35)M63-8
MCLRS — (SH25)M70-9
EXTW — (SH24)M35-3
EXTX — (SH24)M35-8
EXTY — (SH24)M60-3
EXTZ — (SH24)M60-8
INDOO — (SH25)M84-8
WAIT — (SH25)M84-3

7476 M51 — PWRST

TB120-4

BOOT CLR — 7410 M103

BØØTOO — (SH24)M20-3
BØØTO1 — (SH24)M20-8
BØØTO2 — (SH24)M36-3
FSA — (SH30)M11-13
FSA3 — (SH30)M9-2
EXC12 — (SH23)M42-10
RECRST — (SH22)M121-13
INDEXB — (SH22)M123-10
INDEXB — (SH22)M122-4

L⇒PWR RESET

EXC60 (SH23)
BTC61(SH24)L⇒BOOT EXIT
EXTH(SH24)L⇒EXT EXIT
L⇒SCE EXIT
TB66-12

7420 M54 — NSC10

7476 M51 — INSTB

R11 1K — +5V

B12

PHEN — (SH19)M85-9,10
AAC222 — (SH27)M107-10
+2ALU — (SH27)M113-10
AACM10 — (SH26)M127-5
NDC22 — (SH25)M57-2

H⇒INSTB
L⇒INSTB

PCCA22 — (SH26)M96-11
STRBQPR — (SH21)M60-3
(SH18)M60-11
B18

1ØNACK (SH22)
H⇒NOT 1Ø-ACK
AAR PCRI(SH21)
H⇒COMPLETE
NOT
EXC32 (SH23)

7420 M42 — EXC22

7400 M104 — INSTA

TB120-3

L⇒INSTA

INDXB* — (SH22)M123-13

PWRRST*(SH23)L⇒PWR RESET
NDC32 (SH25)
L⇒IND EXIT

7420 M42 — EXC32

PCCA10 — (SH21)M31-3
STRBIR — (SH21)M15-13
AACM12 — (SH26)M128-11
AACP4 — (SH26)M126-13
+2ALU — (SH27)M124-13
MICC20 — (SH21)M45-4
MDCA20 — (SH21)M45-2
AACC10 — (SH26)M48-10
+1/ALU — (SH27)M87-1
-1/ALU — (SH27)M106-4

MDRI5* (SH32)
H⇒INDIRECT
INDXB (SH22)

7410 M26 — EXC20

ADRH (SH31)

7476 M67 — EXEC

R14 1K — +5V

B17

EXECA 7402 M89 — ACRIO (SH21)M45-9
H⇒EXECA

EXEC 7402 M102 — LD-EX (SH25)M97-12

B46

ARCA20 — (SH28)M129-12
ARCM12 — (SH28)M129-10
ARCM30 — (SH28)M129-5
CSC12 — (SH28)M128-1

OPDI14 (SH18
OPDØ8I (SH22)

7402 M56 — EXEC11

TB120-2

7402 M56 — EXC10

T20DR (SH32)

7476 M67 — EXECX

TB83-1

7402 M89 — EXECB

H⇒EXECB

SHLDC — (SH22)M104-9
AACC-12 — (SH26)M125-5
AACM-30 — (SH26)M125-9
AACM14 — (SH26)M126-9
PCCA10 — (SH21) M31-5

7404 M72 — EXECB2I

AACP30 — (SH26)M96-6

TB83-14

TURT4I SH32)
H⇒ 1ST 1/2 CYCLE.
TURT4I * (SH32)
H⇒LAST 1/2 CYCLE

7400 M104 — EXECD

7400 M123 — EXECDI

AACP20 — (SH26)M125-13

EXECC 7402 M68

AACCII — (SH26)M13-4
ALUPCR — (SH21)M76-5

AARPCR (SH21) H⇒COMPLETE,
INTERRUPT I(SH30)H⇒NOT INTERRUPT

7410 M73 — EXC60

L⇒INST SCR

INSTB — (SH23)M51-12
NSC10 — (SH23)M54-9
WAIT — (SH25)M84-16
WAITEN — (SH25)M40-11

EXTH(SH24)
H⇒NOT EXTH
INTERRUPT (SH30)
H⇒INTERRUPT

7420 M57 — EXC62

XTC10
L⇒INT SCR — (SH24)M25-13

MORIO*(SH32) L⇒INDIRECT NOT
SUCCTEST (SH27) L= SUCCESSFUL TEST
ØPD23 (SH19) L⇒JMP

7410 M26 — EXC32

EXC22 — (SH23)M42-2

61

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

TPU CONTROL - STATE COUNTER 001

SIZE D | DOCUMENT NUMBER 047-23-01 | REV G

SCALE NONE | SHEET 23 OF 33

ITEM NO | PART ASSY NO | DESCRIPTION | ASSEMBLY QUANTITIES

REVISION HISTORY

REVISION | DESCRIPTION OF CHANGE | CHK | APP'D

AARMDB (SH 21)

EXC 62 (SH 23)
L ⇒ EXEC EXIT

IØNACK (SH 32)
L ⇒ INST EXIT

7400 M23 XTC10

SCRPSTB1 (SH 23)
L ⇒ STATE CTR RESET

TURT4I * (SH 32)
H ⇒ LAST ½ CYCLE

TURT4I (SH 32)
H ⇒ FIRST ½ CYCLE

T20ØR (SH 32)
H ⇒ t 20

BØØTII (SH 22)
H ⇒ I/Ø BØØT

BØØTCLR (SH 23)

BTC 34 (SH 24)

ACKI (SH 22)
H ⇒ I/Ø ACK

BØØTII (SH 22)
L ⇒ I/Ø BØØT

7476 M20 BØØTOO
7476 M23 BØØTO1
7476 M20 BØØTO2
7476 M36 EXTW
7476 M35 EXTX
7476 M20 EXTY
7476 M20 EXTZ

TB19-9
TB19-3
TB19-8
TB37-9
TB19-12
TB19-1
TB19-2
TB19-7
TB19-6
TB37-12
TB19-10
TB66-1
TB66-14
TB19-5

7420 M42 ATEXI
7400 M23 ATEX
7402 M40 BTC24
7402 M70 BTC14
7400 M40 ETC10

MDCC10 (SH 21) M31-10

7437 M9 CLKMAR
7404 M24 CLKMDRI
MDCA60 (SH 21) M14-6
H ⇒ CSR → MDB

CLRØER (SH 18) M23-1

7400 M55 EXTB
MAR/ALB (SH 26) M119-2
AAC212 (SH 27) M107-5

PROCHALT (SH 33)
7404 M69
7400 M118 EXTCG
PCR/ALB (SH 26) M46-5

7400 M55 EXTC
MDCA40 (SH 21) M38-2
ENENC2 (SH 33) M41-5

NTC 30 (SH 30) M53-9

7400 M71 EXTD
SFAMAB (SH 22) M122-9

MDR/ALUB (SH 28) M95-4
CSC24 (SH 28) M27-10

7404 M24 EXTFI
H ⇒ MDR → CSR

7400 M55 EXTF
MAR/ALB (SH 26) M119-3
AAC212 (SH 27) M107-4

INTH (SH 33) M82-16
INT-EXTZ (SH 30) M3-12
NTC12 (SH 30) M101-5
MACA10 (SH 22) M73-3

7400 M71 EXTH
MDR/ALB (SH 26) M110-11
ALUPCR (SH 21) M76-2
NSC10 (SH 23) M54-10
EXC 62 (SH 23) M57-10

BTC 34 7402 M40
BTC 24 (SH 24) M70-2

BTC 50 7400 M25
7404 M24 BTC51
MAR/ALB (SH 26) M119-11
L ⇒ BØØT 2¹+2²

BTWAITB 7400 M55
ACCS12 (SH 28) M121-9
L ⇒ BØØT WAIT B

IØACR (SH 28) M45-13
ARUACR (SH 21) M76-6
MAR/ALB (SH 26) M119-1

7400 M41 BTWAIT

7400 M25 SHIFT
ACR/ALH (SH 28) M47-13

7400 M90 BOOTXI
+1ALU (SH 27) M87-9
STREMAR (SH 22) M39-4

7400 M25 BØØTX
MDCC10 (SH 21) M31-11

7410 M26 ENTRY
REGRST (SH 22) M121-12
BØØTINH (SH 26) M102-3
ENTGPWR (SH 23) M103-5

7404 M24 ENTRYI
PCR/ALB (SH 26) M46-12

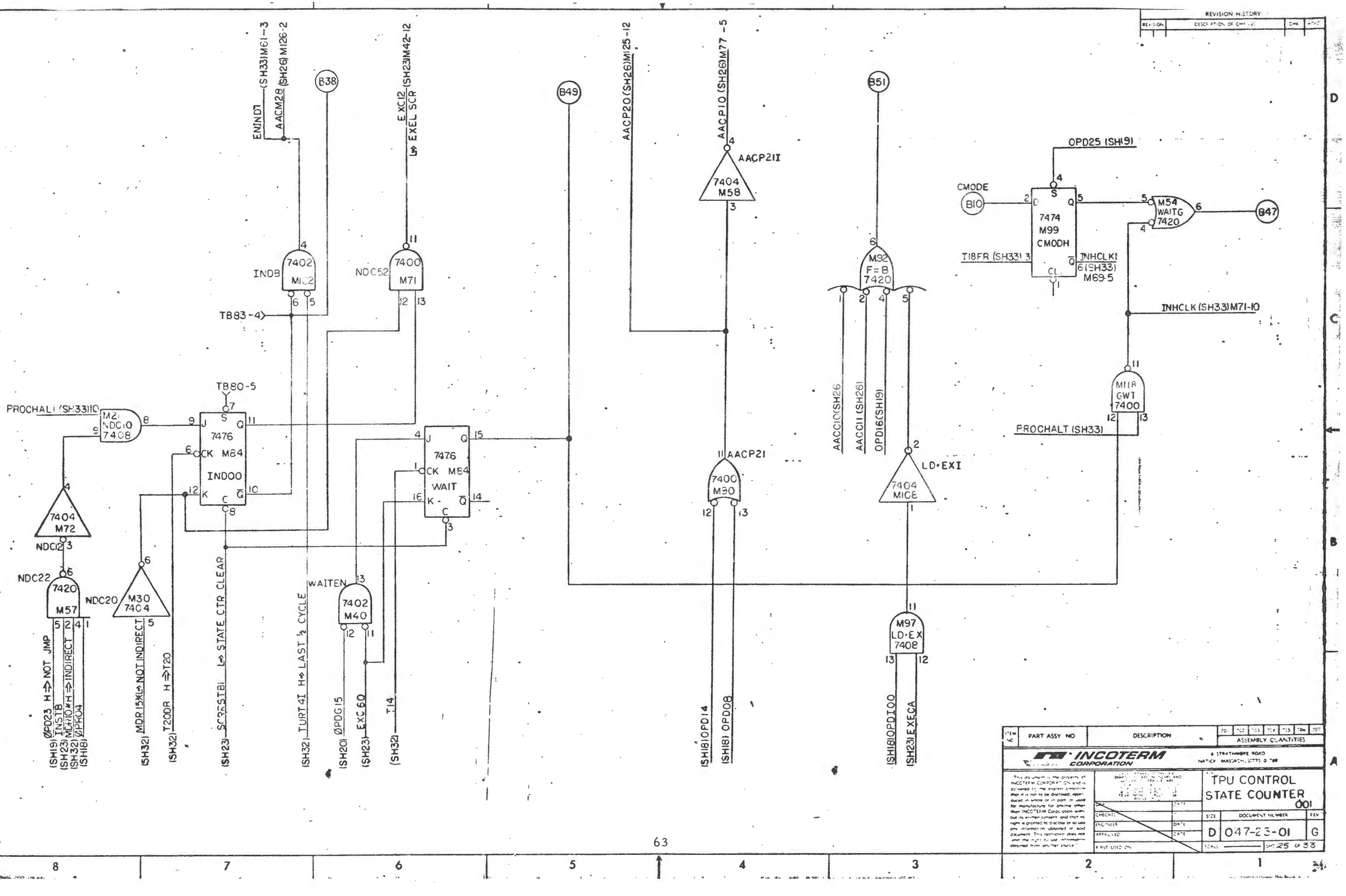
7402 M56 BTC60
NSC10 (SH 23) M54-12

7404 M72 BTC61
L ⇒ INST SCR

BØØT INH (SH 26) M102-8

B7 B32 B56 B61 B32

PART ASSY NO	
DESCRIPTION	
INCOTERM CORPORATION	
THU CONTROL STATE COUNTER CCI	
D 0-7-23-01 G	
NONE 24 33	

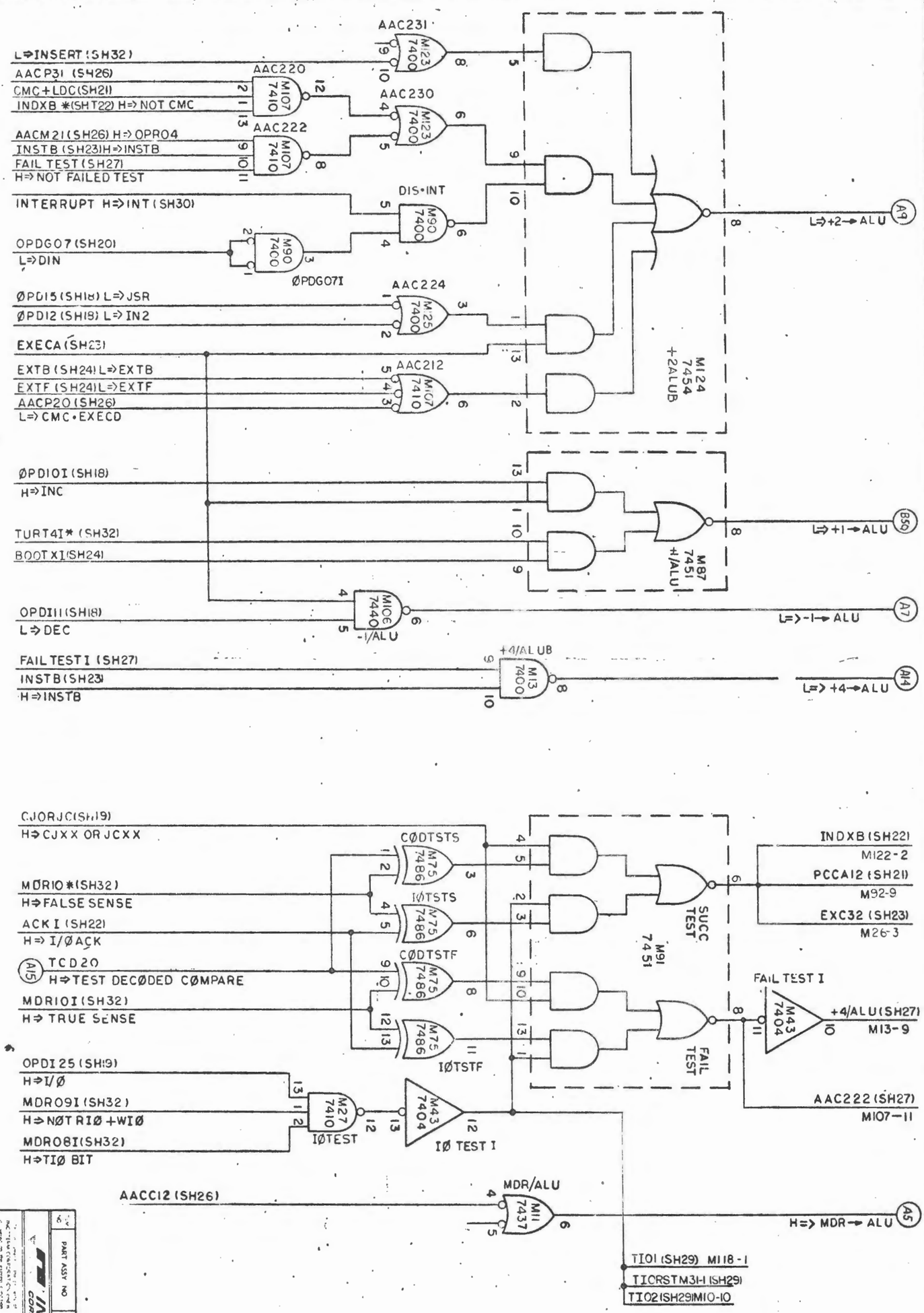

ENIND1 (SH33)M61-3
AACM28 (SH26) M126-2
B38
EXC12 (SH23)M42-12
EXEL SCR
B49
AACP20 (SH26)M125-12
AACP10 (SH26)M77-5
AACP21I
7404 M58
B51
M92 F=B 7420
AACC10(SH26
AACC11 (SH26)
OPD16(SH19)
LD·EXI
7404 MIC8
OPD25 (SH19)
CMODE
B10
7474 M99 CMODH
T18FR (SH33) 3
INHCLK1 6(SH33) M69-5
M54 WAITG 7420
B47
INHCLK (SH33)M71-10
M11R GWT 7400
PROCHALT (SH33)
INDB
7402 MIC2
NDC52
7400 M71
TB83-4)
TB80-5
PROCHALT (SH33)110
M2 NDC10 7408
7476
CK M84
INDOO
7404 M72
NDC12 3
NDC22
7420 M57
NDC20
M30 7404
WAITEN
7402 M40
7476
CK M84
WAIT
AACP21
7400 M90
M97 LD·EX 7408
(SH19) ØPD23 H⇒NOT JMP
(SH23) INSTB
(SH32) MCRIO*H⇒INDIRECT
(SH18) ØPR04
(SH32) MDR15*L⇒NOT INDIRECT
(SH32) T200R H⇒T20
(SH23) SCRSTBI L⇒STATE CTR CLEAR
(SH32) TURT4I H⇒LAST ½ CYCLE
(SH20) ØPDG15
(SH23) EXC60
(SH32) T14
(SH18)OPD14
(SH18) OPD08
(SH18)OPDI00
(SH23) EXECA
REVISION HISTORY
REVISION
DESCRIPTION OF CHANGE
DATE
APPD
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760
TPU CONTROL
STATE COUNTER
001
DRAWN
CHECKED
ENGINEER
APPROVED
FIRST USED ON
SIZE
DOCUMENT NUMBER
REV
D
047-23-01
G
SCALE
SHT 25 OF 33
63

(SH18)ØPRO4*
L⇒ NOT ØPRO4
(SH19) ØPD23
L⇒ JMP *
7400 M127 AACM20
M103 7404 AACM21
M84 7408 AACM12
PROCHALT(SH33)
(SH23)INSTB
PROCHALT (SH33)
(SH22) INDXB
M37 7403 AACM15
M32 7408 AACM23
(SH28)CSC2I
L⇒INC+DEC+IN2
(SH18) ØPD08
L⇒LDC
(SH18) ØPD14
L⇒CMC
7410 M122 AACM22
(SH23)EXECA
(SH23)EXECB
(SH24)EXTH
AACM28
7400 M126
(SH25)INDB
H⇒INDB
(SH33)AACP33
(SH32)MDR09I
L⇒TOP SECTOR
(SH33)AACP41*
(SH26) AACP3I
(SH22) INDXB *
(SH18) ØPD15
H⇒NOT JSR
(SH25)AACP2IT
TOP SECT (SH33)
AACP10
7420 M77
AACP12
7410 M93
(SH22) IØNACK
H⇒NOT I/O·ACK
(SH18) ØPDI15
H⇒JSR
AACP14
7400 M125
(SH24) BTC 6I
(SH24) EXTCG
(SH25)AACP2I
H⇒CMC
(SH23) EXECDI
7400 M125 AACP20
(SH18) ØPRO4*
L⇒NOT ØPRO4
(SH23)EXECB2I
AACP30
7402 M95
(SH23)INSTB*
(SH32)TURT4I
7402 M95 INST·1/2
(SH18) OPDI09
(SH23)EXECA
7400 M47 AACC10
(SH22)OPD08I
(SH23) EXECC M68-13
7400 M13 AACC11
(SH18) OPDI14
(SH33) INDEXI
7400 M125 AACC12
AACM30
(SH18) OPDI15
H⇒JSR
7400 M125
(SH24)ENTRY I
(SH24) BTC 6D
7402 M102 BØØTINH
(SH2+) EXTF · L⇒EXTF
(SH2+) L⇒INSERT
(SH2+) BTC5I L⇒BØØT ØR 2²
(SH24) BTØT00 * L⇒BØØT 2⁰
(SH24) EXTB
7430 M119 MARALB
7400 M118 MAR/ALBI
834

OPR03 (SH18)
MDR0I(SH32)
7420 M80 LOWALB
LØW/ALBI
7402 M96
AACM10
7400 M127
7404 M112 AACM11
MDR/ALEMI
7404 M03 MDR/ALBM
H⇒MDR→ALB09-11
AACP42 (SH33)M32-13
L/ALB (SH33)M79-4
ENINDI(SH33) M61-4
AAC[illegible] (SH33)M32-[illegible]
7410 M125 AACM12
MDR/ALB
7430 M10
H⇒MDR→ALB00-08
AAC222(SH27) M107-9
AACP32
7410 M62
7410 M62 AACP40
PCR/ALBM
7410 M62
H⇒PCR→ALB10-11
7404 M43 PCRALBI
7400 M47
PCR/ALB9
H⇒PCR09→ALB09
7430 M46 PCR/ALB
H⇒PCR→ALB01-[illegible]
AAC212 (SH27) M107-3
AACCCO (SH27) M107-2
AACP10 (SH26) M77-2
PROCHALT SH33
7408 M94 AACP3I
F-B (SH25)M92-1
IND/ALUB
7440 M12
H⇒INDEX→ALUB IN
MDR/ALU(SH27) MI[illegible]-4
MDCA40(SH21) M38-1
F=B (SH25) M92-2
7402 M102
7400 M118
7430 M119

A36 A33 A35 A37 A38 A39 A13

INCOTERM CORPORATION
PART ASSY NO.
DESCRIPTION
DATE
SIZE D
DOCUMENT NUMBER 047-23-01
REV G
SCALE NONE
SHT 26 OF 33
CPU CONTROL — AUXILIARY ARITHMETIC UNIT CONTROL (OC)



INCOTERM CORPORATION
TPU CONTROL
AUX. ARITHETIC
UNIT CONTROL 001
C47-23-01
D
NONE

A18 H⇒ ARU RESULTS→CSR

A16 L⇒ ACR→ALU

CSC14 (SH28) M44-11

7410 M27 CSC24

7404 M30 ACRALUI

ACR ALU 7410 M111

A34 L⇒ MDR→ALU BIN

ARUACR (SH28) M76-10

MDR/ALUBI 7404 M30

7430 M95 MDR/ALUB

A20 L⇒ MDR*→ALU BIN

7404 M103 MDR*/ALUBI

7410 M111 MDR*/ALUB

A10 H⇒ DATA IN BUS→ACR

IO ACR 7400 M45

7410 M59 ARC110

A12 L⇒ STROBE CSR

CUC20 (SH21) M32-10 H⇒ INC+DEC+IN2

7402 M20 STRBCSRI

7410 M55 STRBCSR

7400 M44 CSC14

7400 M44 CSC10

7410 M129 CSC12

MDCA30 (SH21) M193-10

AACM22 (SH26) M128-3

L⇒ INC+DEC+IN2

A6 H⇒ ALU RESULTS→CSR

7420 M23 ALU/CSR

ACCR22 (SH21) M77-10

7404 M30 ACR/ALBI

A30 H⇒ SHIFT UNIT→ARB

7400 M47 ACR/ALB

(SH33) WD/JMP

7451 M87 INT-1

AACP44I 7404 M58

AACP44 (SH33)

7402 M68 WD IND

7404 M72 INT-1*

(SH18) ØPRO3*

(SH32) MDRIOI

(SH33) AACP33 M48-5

7400 M23 ARCA20

7400 M129 ARCM22

7400 M129 ARCM30

7400 M129 ARCM42

LØWAREM

CSC21 7404 M112

CSC20 7410 M111

(SH18) ØPDO2I H⇒ AD

(SH23) EXEC H⇒ EXEC

(SH19) ØPDI8 L⇒ ADI

(SH24) EXTY*

(SH19) ØPDO2 L⇒ C XX

(SH19) L⇒ SB

(SH18) ØPDO3 L⇒ SB

(SH18) ØPDO4 L⇒ CM

(SH19) ØPDO5 H⇒ I/O

(SH32) MDRO9* H⇒ RIO+WIO

(SH22) ACKT H⇒ IOACK

(SH24) BT WAIT L⇒ BT WAIT

(SH28) CSC24

(SH32) TIO H⇒ TIO

(SH18) ØPDIOI L⇒ NC

(SH18) ØPDII L⇒ DEC

(SH18) ØPDI2 L⇒ IN2

(SH32) TIO H⇒ TIO

(SH32) TI6 H⇒ TI6

(SH18) ØPDI3 L⇒ CMC

(SH22) REGRST H⇒ RESET RESET

(SH18) ØPDI4 L⇒ CMC

(SH20) ØPD G09 L⇒ SHIFT

SHIFT

(SH24) BØØT SHIFT

INCOTERM CORPORATION

TPU CONTROL ARITHMETIC UNIT CONTROL 001

D 047-23-01 G

NONE SHT 28 OF 33

66

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APP'D

B16
L⇒ RTC+INT+SEL PROP
INTENCO SH33 M22-2
7402 M117 INTRTC
RTCSEL I 7400 M100
RTCINT 7400 M101
7400 M101 RTCINT *
AUTOINT 7402 M116
RTCSEL 7402 M117
7400 M101 SETRTCINT
RTCINTEN 7402 M117
7476 M115 RTCMSK
7476 M115 RTCRDY
B43
CITDS 7402 M70
UNMRTC 7402 M116
7402 M116 MSKRTC
7474 M114 RTCFF
RTC L⇒ RTC
B6
FUNC03(SH32)
INTSEL * (SH30) L⇒ INT SELECT
FUNC00 (SH32) L⇒ I/O FUN 2°
T10 (SH 32) H⇒ x9
FUNC01(SH32) L⇒ I/O FUN 2'
CIADD 7400 M41
MDR08*(SH32)
INTSEL (SH30) H⇒ INT SELECT
ADD15 (SH31)
ARKT (SH22)M105-5
B76
L⇒ ACK TO I/O BUS
B31
74126 M3 AKDRTC
7402 M116 READRTC
STB 83-3 INHIBIT RTC SWITCH
7400 M100 RTC10
7400 M100 CLRRTC
7400 M100 CLRRTCI
MDR09I (SH32) L⇒ I/O TYPE 2'
T2 (SH32)
RESET (SH22) L⇒ I/O RESET
ENENC1 (SH33) M73-11
7404 M69 TIORTCI
B73
TACK 74126 M10
T102 74126 M10
TI01 7400 M118
7402 M68 TIORTC
7410 M31 TIORST
CONTI5I M58 7404
IOTESTS(SH27)
MDRC4* (SH32)
INT PI(SH33)
MDR05*(SH32)

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

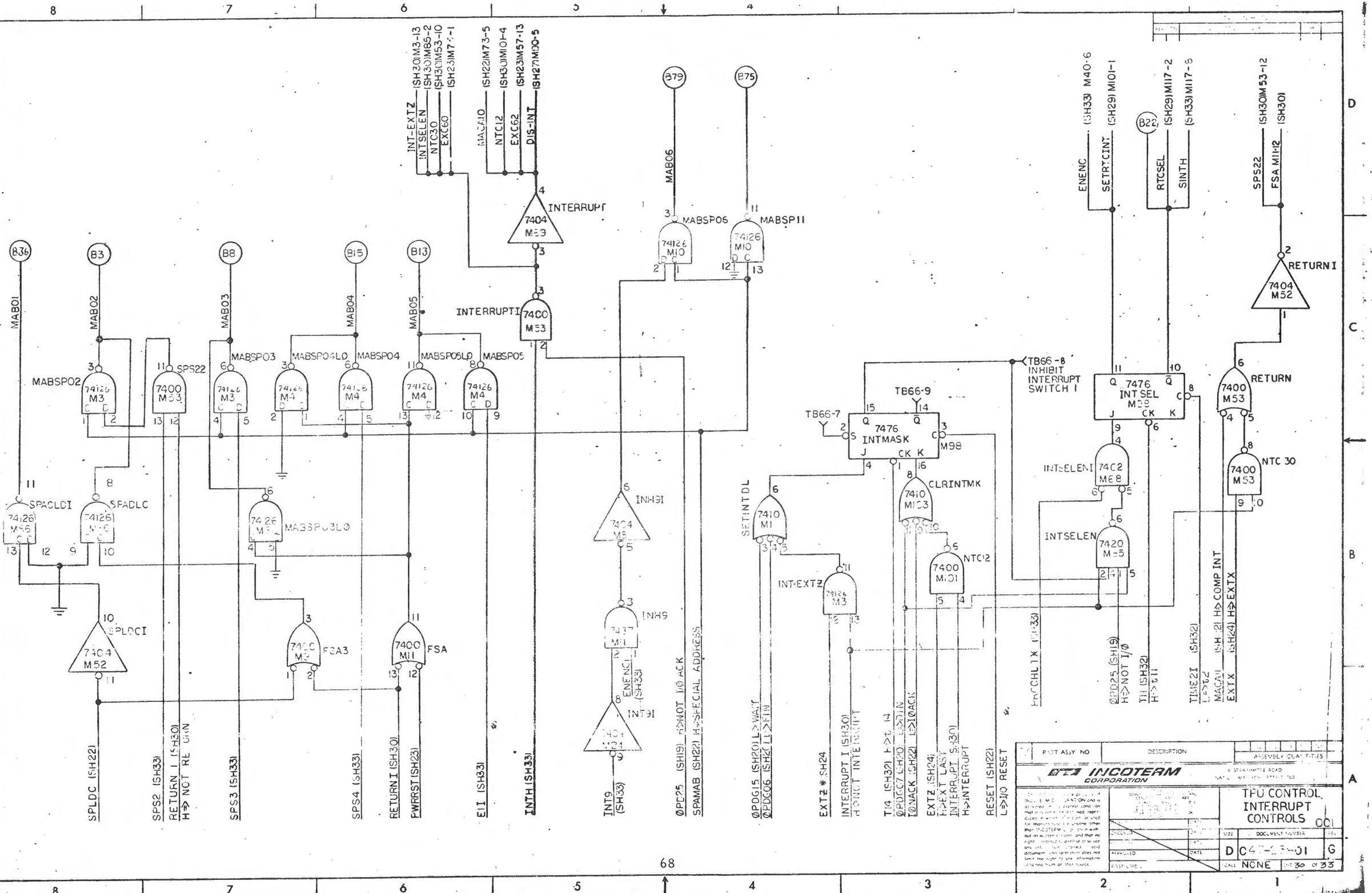
INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK MASSACHUSETTS 01760

TPU CONTROL REAL TIME CLOCK MODULE 001

SIZE	DOCUMENT NUMBER	REV
D	047-23-01	G

SCALE NONE SHEET 29 OF 35

67


INT-EXTZ
INTSELEN
NTC30
EXC60
ISH30IM3-13
ISH30IM85-2
ISH30IM53-10
ISH23IM7?-1
MACAIO
NTCI2
EXC62
DIS-INT
ISH22IM73-5
ISH30IMIO-4
ISH23IM57-13
ISH27IM30-5
INTERRUPT
7404 M89
INTERRUPTI
7400 M33
B79
B75
MAB06
MABSP06
MABSP11
74126 MIO
B36
B3
B8
B15
B13
MAB01
MAB02
MAB03
MAB04
MAB05
MABSP02
MABSP03
MABSP04LO
MABSP04
MABSP05LO
MABSP05
SPS22
74126 M3
74126 M4
7400 M53
SPACLDI
SPADLC
74126 M56
74126 M58
SPLDCI
7404 M52
MABSP03LO
FSA3
FSA
7400 M11
INH8I
7404 M8
INH9
7437 M81
ENENCL (SH33)
INT9I
INT9 (SH33)
SPLDC (SH22)
SPS2 (SH33)
RETURN I (SH30)
H⇒NOT RETURN
SPS3 (SH33)
SPS4 (SH33)
RETURNI (SH30)
PWRRST (SH23)
EII (SH33)
INTH (SH33)
ØPP25 (SH19) H⇒NOT I/O ACK
SPAMAB (SH22) H⇒SPECIAL ADDRESS
TB66-8
INHIBIT INTERRUPT SWITCH I
TB66-9
TB66-7
7476 INTMASK M98
SETINTDL
7410 MI
INT-EXTZ
7410 MIO3
CLRINTMK
7400 MI01
NTCI2
ØPDG15 (SH20) L⇒WAIT
ØPDC06 (SH21) L⇒FIN
EXTZ*(SH24)
INTERRUPT I (SH30)
H⇒NOT INTERRUPT
TI4 (SH32) L⇒I4
ØPDCC7 (SH20) L⇒DIN
IØACK (SH22) L⇒IØACK
EXTZ (SH24) H⇒EXT LAST INTERRUPT (SH30) H⇒INTERRUPT
RESET (SH22) L⇒I/O RESET
ENENC
SETRTCINT
ISH33 M40-6
ISH29 MIOI-1
B22
RTCSEL
SINTH
ISH29 MII7-2
ISH33 MII7-5
7476 INT SEL M38
INTSELENI
7402 M68
INTSELEN
7420 M85
SPS22
FSA MII-12
ISH30IM53-12
ISH30I
RETURNI
7404 M52
RETURN
7400 M53
NTC 30
7400 M53
HACCHL1X (SH33)
ØPD25 (SH19) H⇒NOT I/Ø
TII (SH32) H⇒TII
TIME2I (SH32) L⇒TI62
MACAII (SH21) H⇒COMP INT
EXTX (SH24) H⇒EXTX
PART ASSY NO
DESCRIPTION
ASSEMBLY CLASS TITLES
INCOTERM CORPORATION
TPU CONTROL INTERRUPT CONTROLS
SIZE
DOCUMENT NUMBER
REV
D
G
SCALE NONE
SHT 30 OF 33

REVISION	DESCRIPTION OF CHANGE	CHK	DATE

READRTC (SH29) M16-11
TIORTC (SH29) M68-9
SINDF (SH33) M74-5
CONTSI (SH29) M58-5

A46 A44 A40 A55 A47 A49 A51 A53 A57 A59 A61 A63 A71 A65

17 16 15 14 13 11 10 9 8 7 6 5 4 3 2 1

ADD15 ADD14 ADD13 ADD12 ADD11 ADD10 ADD09 ADD08 ADD07 ADD06 ADD05 ADD04 ADD03 ADD02 ADD01 ADD00

SN74154
CØNT00-15
M16

12
24 +5VDC

ENABLE A3 A2 A1 A0

19 18 20 21 22 23

OPD25 (SH19)

MDR03*(SH20) MDR02*(SH20) MDR01*(SH20) MDR00*(SH20)

CLROPR (SH 18) 10
EXEC (SH 23) 12
BYPASS (SH 21) 11
D S Q 9
M17
7474
CK
ADRH

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

TRU CONTROL
DECODER & WIRER
OPTION MATRIX 001

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	047-23-01	G
ENGINEER	DATE			
APPROVED	DATE	SCALE	NONE	SHT 31 OF 33
NEXT USED ON				

NOTE:
ALL RESTORS 100~1/4W, 5%.

RTC10 (SH29) M100-13

B11 T2 H⇒T2

7410 M1 TIME21

INTSEL (SH30) M98-8

B44 T3 H⇒T3 R13

CLRCPR (SH18) M23-13,10,2

CUC30 (SH21) M15-5

MEMSTRB (SH21) M59-13,

A4 T6 H⇒T6

T61 7400 M73

STRBOPR (SH18) M60-12

CSC14 (SH28) M44-2

CSC10 (SH28) M44-4

B94 T7 H⇒T7 R12

7404 M43 TIME 71

BYPASS (SH21) M29-4

CPDH (SH31) M17-11

A25 T10 H⇒T10 R10

RTCEF (SH29) M114-3

RTCMSK (SH29) M115-1

CUC20 (SH21) M32-11

B20 MDR08 L⇒MDR08

74C4 M52 MDR08*

7437 M11 MDR08I

TYP00 A3

RIØACK (SH22) M28-13

IØTEST (SH27) M27-2

IØNAK (SH22) M27-3

RIØACK (SH22) M28-12

ARCI10 (SH28) M59-11

CIADD (SH29) M41-1

A21 MDR09 L⇒MDR09

74C0 M13 MDR09*

7440 M12 MDR09I

AACP44 (SH33) M48-2

LOW/ALBI (SH26) M96-8

IØTEST (SH27) M27-1

AACP42 (SH26) M62-9

TYP01 E31

AACP32 (SH26) M62-5

READRTC (SH29) M116-12

WD IND (SH28) M66-3

LOW/ALB (SH26) M80-2

AACP45 (SH33) M48-8

INDG (SH33) M47-10

ENINDI (SH33) M61-5

CØDTSTF (SH27) M75-10

IØTSTF (SH27) M75-12

B82 MDRI0 L⇒MDRI0

74C4 M53 MDRIC*

7404 M43 MDRI0I

CØDTSTS (SH27) M75-2

EXC32 (SH23) M26-4

NDC22 (SH25) M57-4

JMPIND (SH22) M121-2

IØTSTS (SH27) M75-4

MDCARC (SH21) M14-5

STRBYTE (SH21) M14-9

A8 T11 H⇒T11

7400 M44 TIME11

BYPASS* (SH21) M29-13

INTSEL (SH30) M98-6 R9

B59 MDR04 L⇒MDR04

74C4 M8 MDR04*

7437 M7 FUNC00

TI01 (SH29) M118-2

B45 UNMRTC (SH29) M116-5

TIORST (SH29) M31-2

MSKRTC (SH29) M116-8

B57 MDR05 L⇒MDR05

74C4 M8 MDR05*

FUNC01

B14 ENIND2 (SH33) M93-1

ENINDI (SH33) M61-2

WAIT (SH25) M84-1

INTMASK (SH30) M98-1

A81 T14 H⇒T14 R8

TI4I (SH21)

A27 MDR15 L⇒MDR15

7402 M14 MDR15*

EXC20 (SH23) M26-1

NDC20 (SH25) M47-1

B65 MDR06 L⇒MDR06

74C4 M8 MDR06*

7437 M9 FUNC02

B67 SINDF (SH33) M74-6

A17 T16 H⇒T16

CSCI2 (SH28) M128-13

B63 MDR07 L⇒MDR07

74C4 M8 MDR07*

7437 M9 FUNC03

B69 CITDS (SH29) M70-12

STRBPCR (SH21) M61-10

B41 T17 H⇒T17

STRBMAR (SH22) M39-13

T19INH (SH21) M56-11

B62 MARCLK

7404 M72 MARCLKI

STRBMAR (SH22) M39-5

A11 L⇒INSERT

GWT (SH25) M118-13

MEMSTRB (SH29) M59-1

AAC231 (SH27) M123-10

MARALB (SH26) M119-4

INTH (SH33) M82-1

PWRUP (SH23) M36-6

PWRRST (SH23) M51-1

INSTB (SH23) M51-6

EXEC (SH23) M67-1

EXCCX (SH23) M67-6

EXTW (SH24) M35-1

EXTX (SH24) M35-6

EXTY (SH24) M50-1

EXTZ (SH24) M50-6

BØØTOO (SH24) M20-1

BØØTOI (SH24) M20-6

BØØTO2 (SH24) M36-1

INDOO (SH25) M84-6

A45 MARCUR H⇒CURSOR ADDRESSED

CUC20 (SH21) M32-9

PROCHALT (SH33)

B54 T20 H⇒T20 R7

M7 GT20 7400

7437 M7 T20DR

A50 TI9 R6

INDF M63-6 (SH33)

B20 TURT 4 H⇒LAST 1/2 CYCLE

7404 M52 TURT4I

INSTA (SH23) M104-5

EXECB (SH23) M89-5

EXTC (SH24) M55-4

INDB (SH25) M102-5

INST·1/2 (SH26) M96-12

7404 M52 TURT4I*

EXECA (SH23) M89-2

EXECC (SH23) M68-11

+1/ALU (SH27) M87-10

EXTB (SH24) M55-9

EXECD (SH23) M104-1

EXTD (SH24) M71-2

EXTE (SH24) M55-2

EXTH (SH24) M71-4

TI8FR (SH33) M38-10

GND +5VDC

C2 C3 C1 C4 C5 C6-26 ALL .1μf

ALL 5 or 12V

86 85 86 85 2 1 2 1

B B A B A

REVISION HISTORY

NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION

TPU CONTROL LINE DRIVERS 001

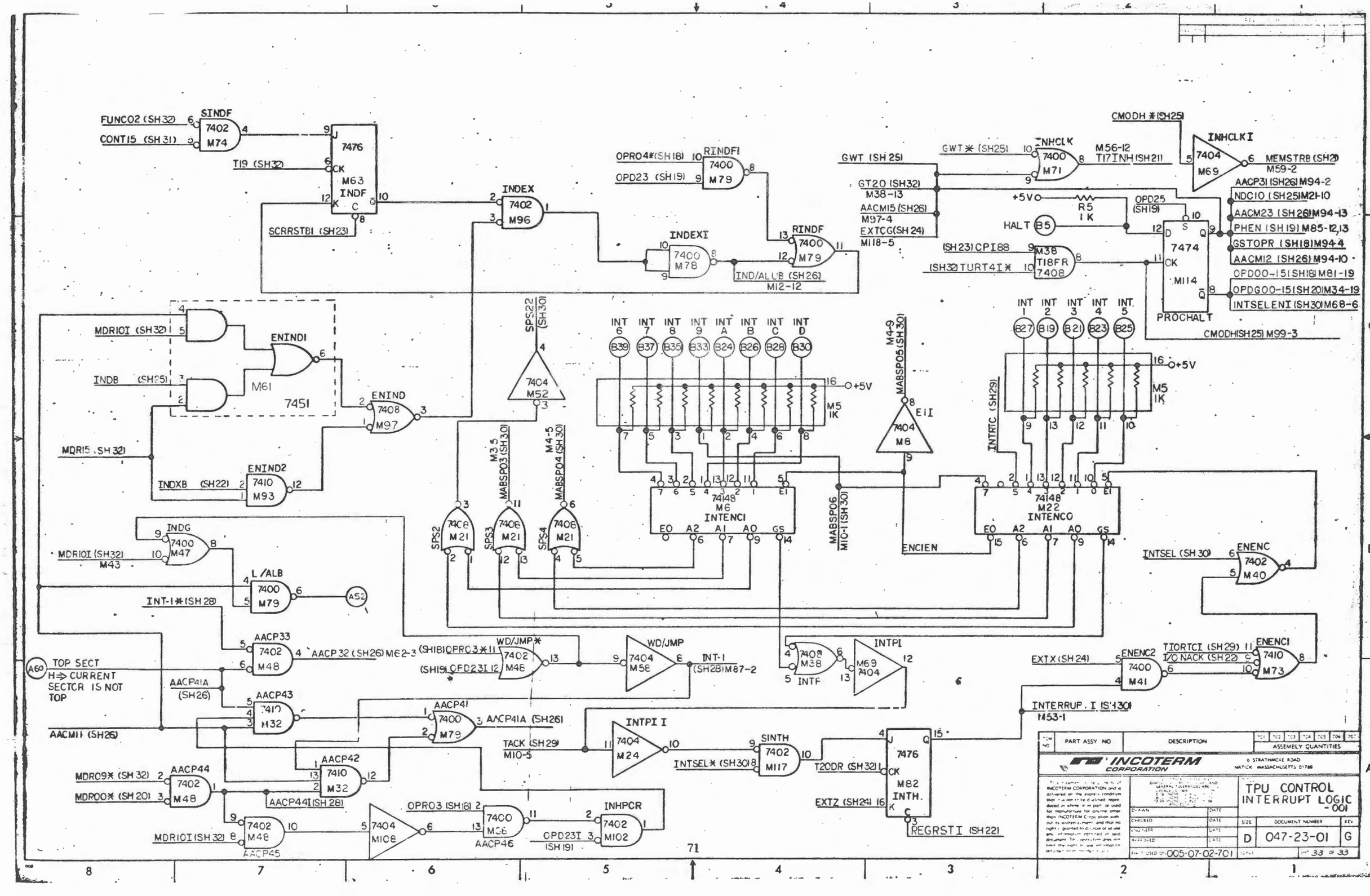
D 10-17-23-01 G

SCALE NONE SHT 32 OF 33

8 7 6 5 4 3 2 1

A B C D

70



ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

DRAWN DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE

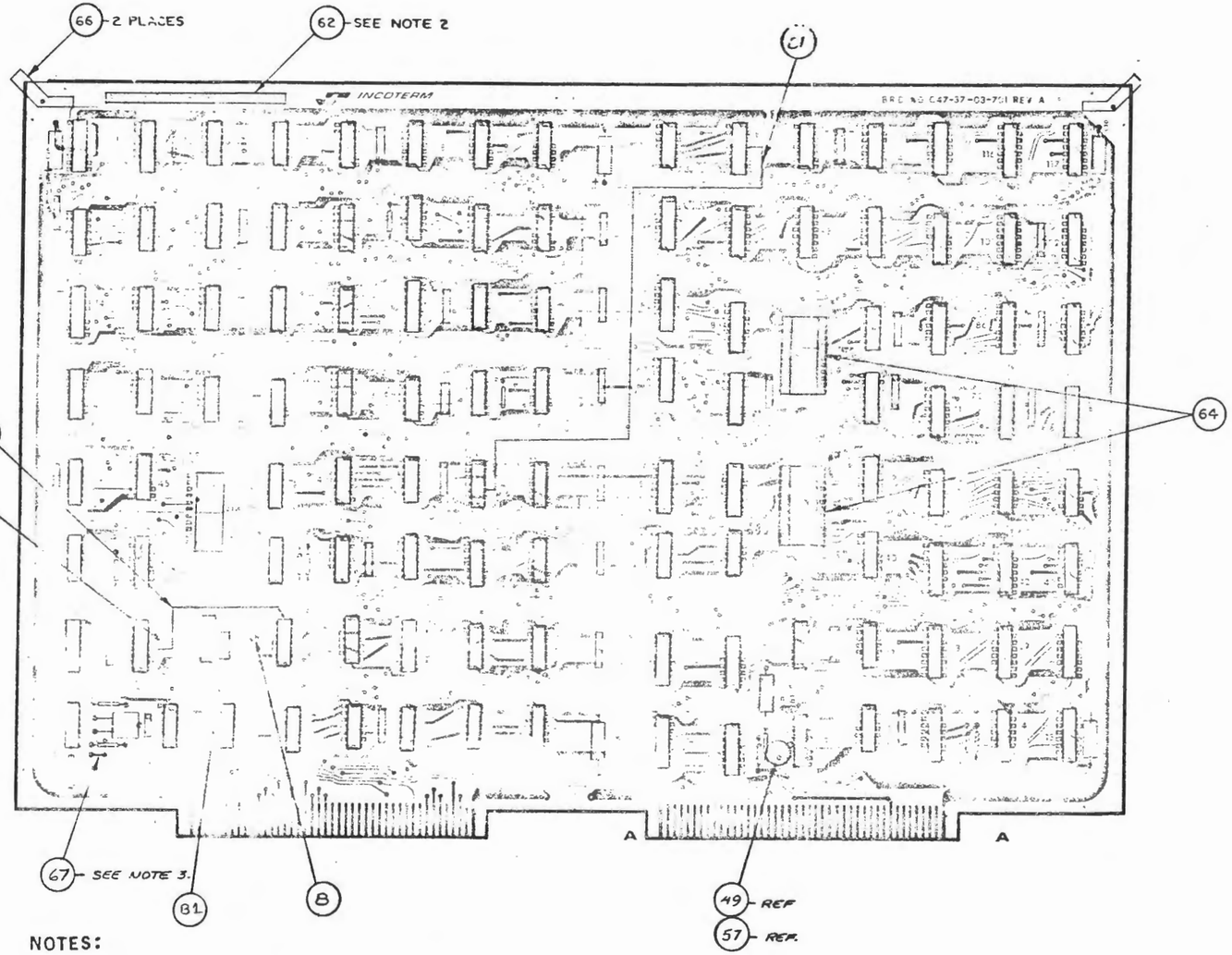
TPU CONTROL
INTERRUPT LOGIC
-001

SIZE D | DOCUMENT NUMBER 047-23-01 | REV G

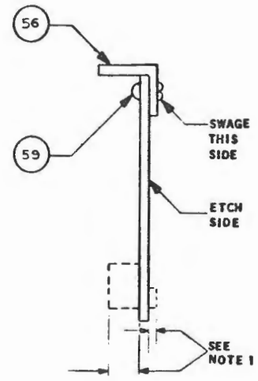
NEXT USED ON 005-07-02-701 | SCALE | SHT 33 OF 33

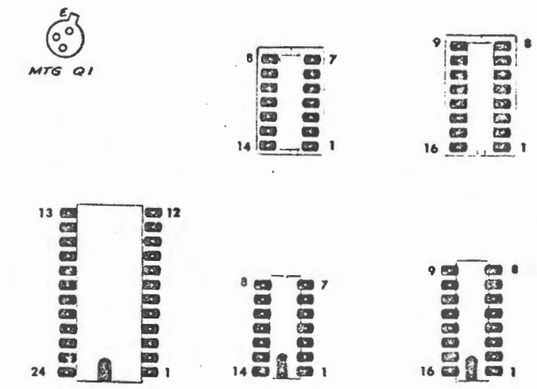
	ADD JUMPER W/PART FROM	CUT ETCH FROM	
A1	M37-6 TO EYELET	A	M12-4 TO M18-1
B1	M18-1 TO M18-5	B	M18-1 TO EYELET
703 & 704 ONLY	C1	M112-5 TO M50-3	

A	RELEASED/ECO 3348	
A1	REV CHG ONLY/ECO 3379	
B	[illegible]	
C	REVISED/ECO 3608	
C1	REVISED/ECO 3658	
D	REVISED/ECO 3670	



ITEM NO.	REFERENCE DESIGNATION
57	Q1 (TRANSIPAD)
53	CL1
52	
51	
50	VR1
49	Q1
48	
47	C32
46	C26,27,28,29,30,31
45	C2-25,C33-37
44	C1
43	
42	R13
41	R11
40	R3,5,6
39	R1,2,4,7,8,12
38	R9,10
37	M69 (702 ONLY)
36	M54 (702 ONLY)
35	M90
34	M57
33	M54,69
32	M10,82,96
31	M24,25,28,29,30,52,70,98
30	M13,14,15,115,116,117
29	M11,53,68,83,97,104
28	M6
27	M9,99
26	M59,67, ,00,101,102,112
25	M46
24	M2,3,4,5,6,7,8
23	M26,33,55,84
22	M27,40
21	M71,72,73,85,86,87
20	M41,42,43
19	M21,74,75,103
18	M22,37,51,107,108,109
17	M31,49,64,80,91
16	M50,63,65,89
15	M17,32
14	M114
13	M 15
12	M47
11	M66,77,93
10	M1,2,8,9,38,45,56,58,61,111
9	M23,34,35,36,44,62,75,78, 92,94,95,106
8	M67,83,48,60,76,81,105,110
7	M88
6	
5	
4	
3	
2	





PIN NUMBERING
AND ORIENTATION

NOTES:

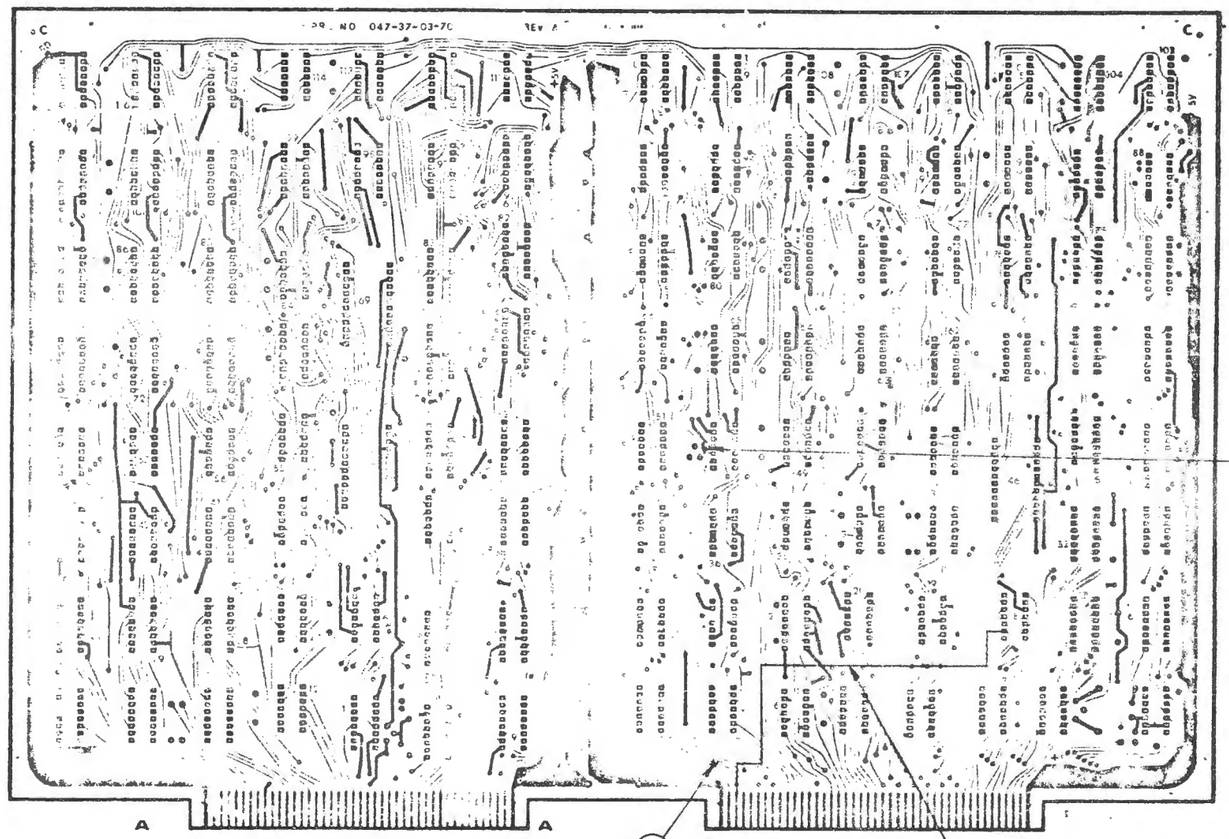
1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 62
   AND MARK ASSY NO. 047-37-02-70_ AND LATEST ASSY REVISION.
3. JUMPER MAY BE REMOVED BETWEEN 1 & 2 FOR MFG TEST.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-37-03-701 REV A

ITEM NO.	PART/ASSY NO	DESCRIPTION	QTY
68	MC GLUE	HOT MELT GLUE (THERMOGRIP)	.01 .02

PART ASSY NO	[illegible]		
INCOTERM CORPORATION		P.C. BOARD ASSY SMCTU II -701 & -704	
P Blanchard	11/19/74	D 047-37-02	D
R Bowden	11-21-74		
[illegible]	[illegible]	FULL 1 3	



ETCH SIDE

A1	I/O PIN B82 TO M18-2 ADDJUMPER WIRE (ITEM 67) FROM	B	M50-3 TO EYELET	703, 704 ONLY
		A	I/O PIN B82 TO M23-6 CUT ETCH FROM	

PART ASSY NO

INCOTERM CORPORATION

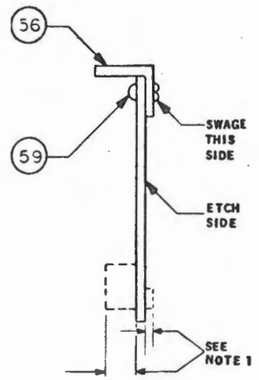
DRILL DRAWING
SMCTU II
701

D 047-37-02 D

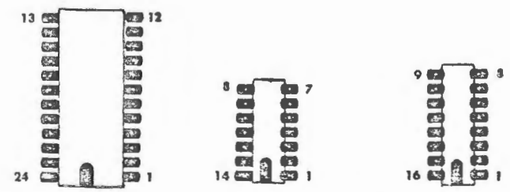
FULL 2 3

8 7 6 5 4 3 2 1

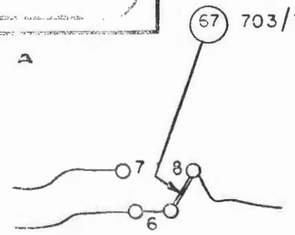
ITEM NO.	REFERENCE DESIGNATION
67	M54,69(24 PIN SOCKET)
66	
65	
64	
63	
62	
61	
60	
59	
58	
57	Q1 (TRANSIPAD)
56	
54	
55	CL1
52	
51	
50	VR1
49	Q1
48	
47	C 32
46	C 26 -31
45	C 2-25 33-37
44	D1
43	
42	R 13
41	R 11
40	R 3-6
39	R 1,2,7,8,12
38	R 9,10
37	M 69 (702 & 704 ONLY)
36	M 54 (703 & 704 ONLY)
35	M 90
34	M 57
33	
32	M 1,8,95
31	M 2-25,28,29,30,52,70,98
30	M 13,14,15,115,116,117
29	M 11,53,63,83,97,104
28	M 16
27	M 99
26	M 59,67,100,101,102,112
25	M 46
24	M 2-3
23	M 26,28,33,34
22	M 27,40
21	M 7,36,3,85,35,87
20	M 41,42,43
19	M 21,74,73,103
18	M 22,37,51,107,108,109
17	M 31,49,64,80,91
16	M 50,53,65,89
15	M 17,32
14	M 114
13	M 115
12	M 117
11	M 66,77,93
10	M 12,18,19,39,45,56,58,61,111
9	M 23,24,35,36,44,62,75,78, 92,94,95,106
8	M 20,33,43,60,76,81,105,110
7	M 66
6	
5	
4	
3	
2	



MTG Q1



PIN NUMBERING AND ORIENTATION



DETAIL A

SCALE NONE
SEE NOTE 4

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 62
   AND MARK ASSY NO. AND LATEST ASSY REVISION.
3. JUMPER MAY BE REMOVED BETWEEN 1 & 2 FOR MFG TEST
4. JUMPER 6 TO 7 FOR 701 & 702 AND
   JUMPER 6 TO 8 FOR 703 & 704

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-37-03-701 REV B

PART ASSY NO	DESCRIPTION

INCOTERM CORPORATION

INCOTERM CORPORATION DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS PREPARED BY INCOTERM CORP. ARE THE PROPERTY OF INCOTERM CORP. AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR OF ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF INCOTERM CORP. IN CONFIDENCE THEY ARE ISSUED AND THAT NO PART OF THE INFORMATION CONTAINED IN SAID DOCUMENTS SHALL BE DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE EXCEPT FOR THE PURPOSE FOR WHICH THE SAME ARE FURNISHED. THE RECEIPT OR POSSESSION OF THIS DRAWING DOES NOT CONVEY ANY RIGHTS TO REPRODUCE OR USE ANY INFORMATION CONTAINED IN SAID DOCUMENT. THE RIGHT TO REPRODUCE THIS DRAWING OR TO USE THE INFORMATION CONTAINED THEREIN MUST BE OBTAINED FROM INCOTERM CORP.

DRAWN	R.L. Cake	12-5-79
CHECKED	Dan Gerber	12-5-79
ENGR APPROVED	R.E. Rivers	12-5-79
MFG APPROVED	[illegible]	12-11-79
FIRST USED ON		

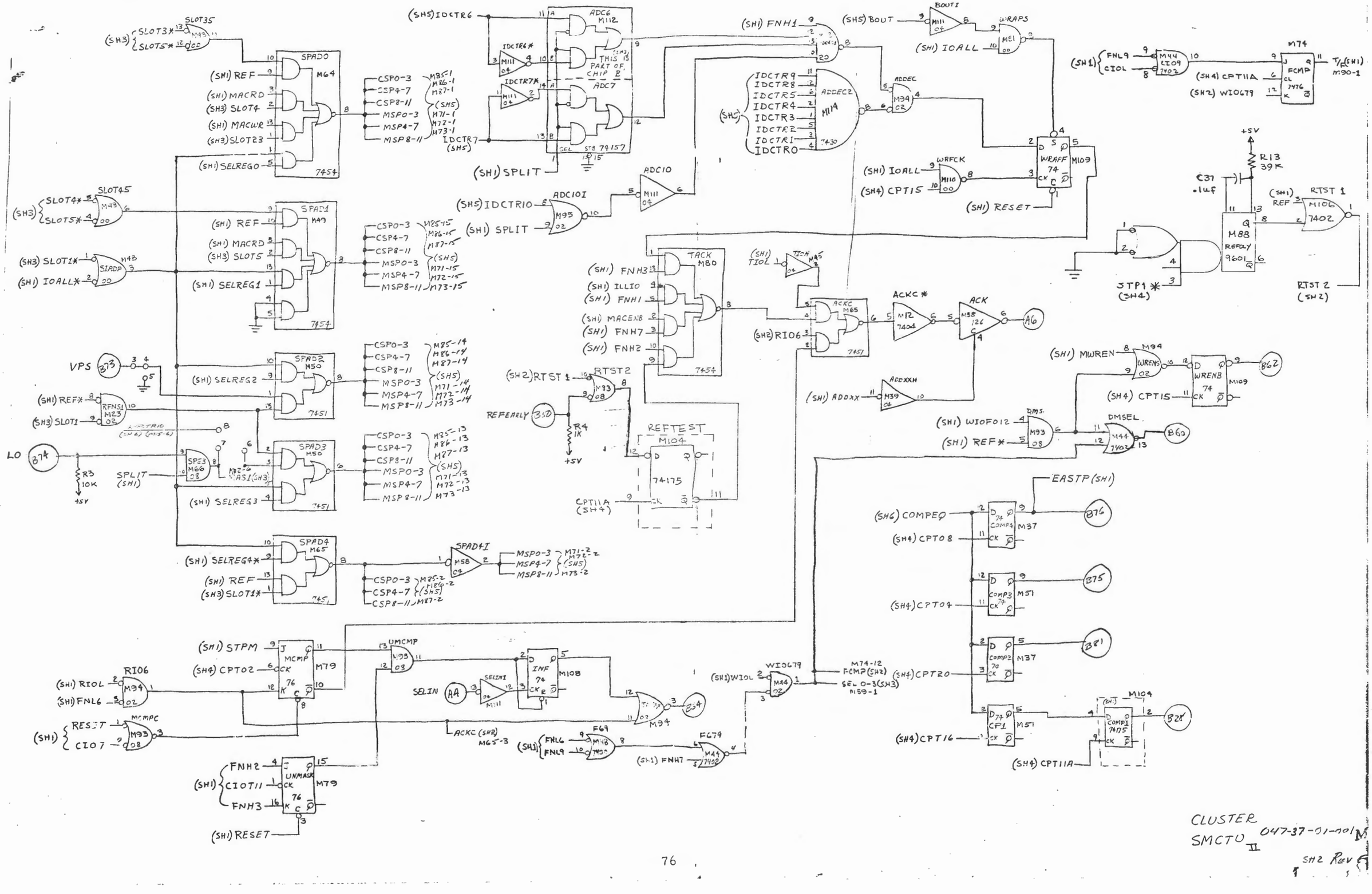
P.C. BOARD ASSY
SMCTU II
-701-704

SIZE	DOCUMENT NUMBER	REV
D	047-37-02	D

SCALE 1:1 SHT 3 OF 3

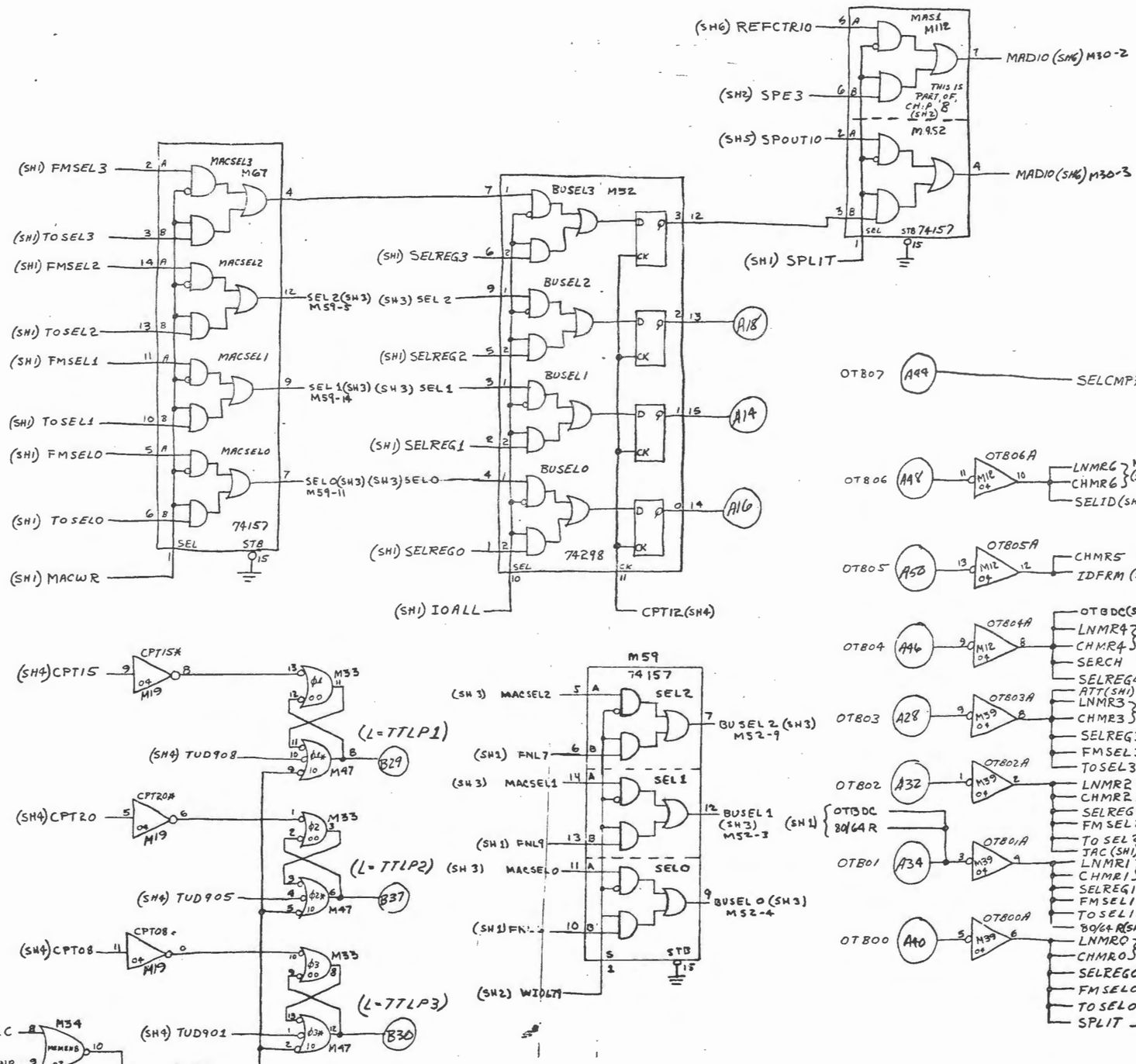
REV B ECO NO 3400 8-31-74
REV C ECO 3608
REV D ECO 3678
REV E ECO 3670

CLUSTER 047-37-01-001
SMCTU II
SNS-RB 6-29-74
REV E
SH1 OF 9



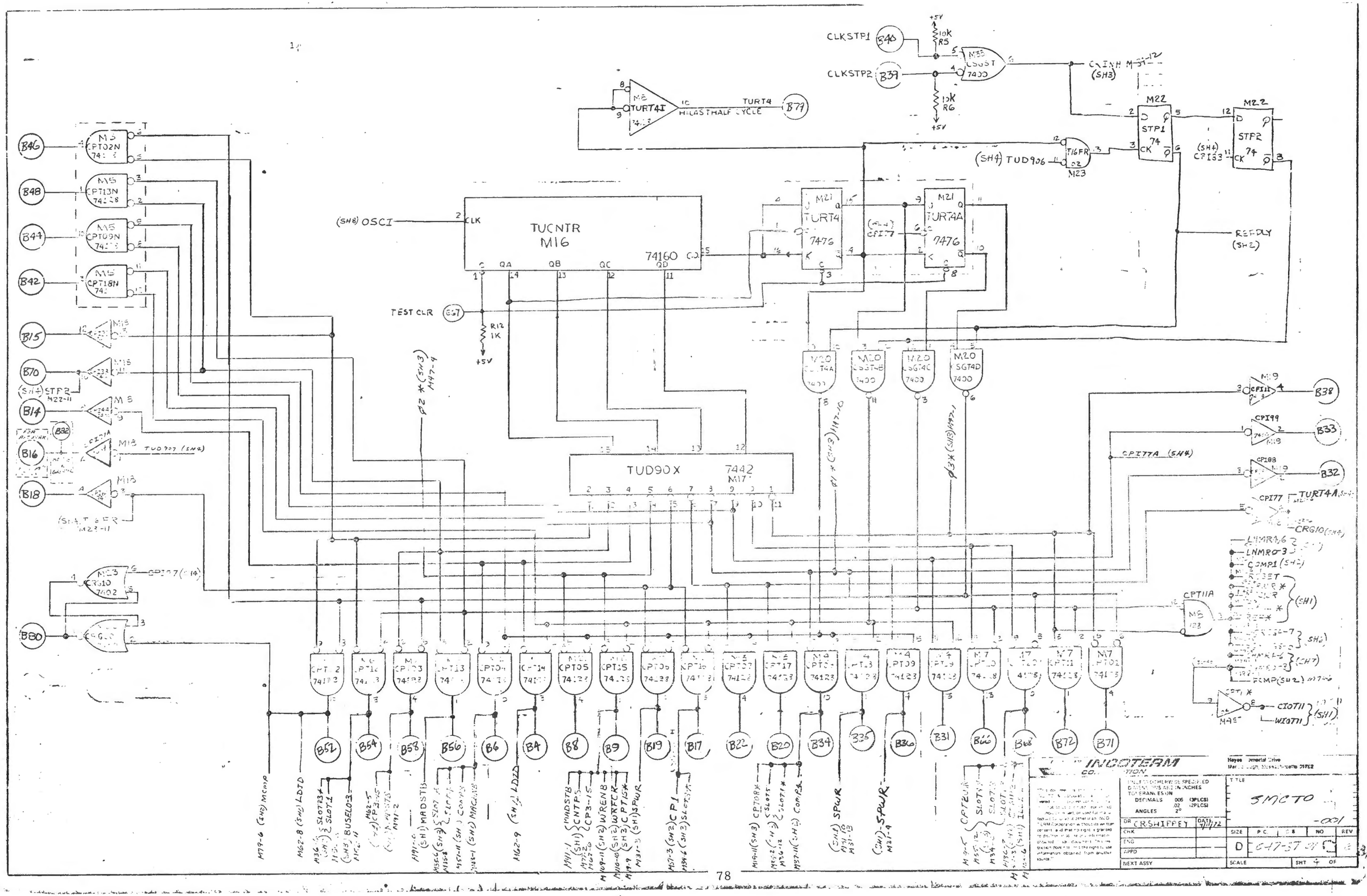
CLUSTER
SMCTO II 047-37-01-001 M

SH2 REV



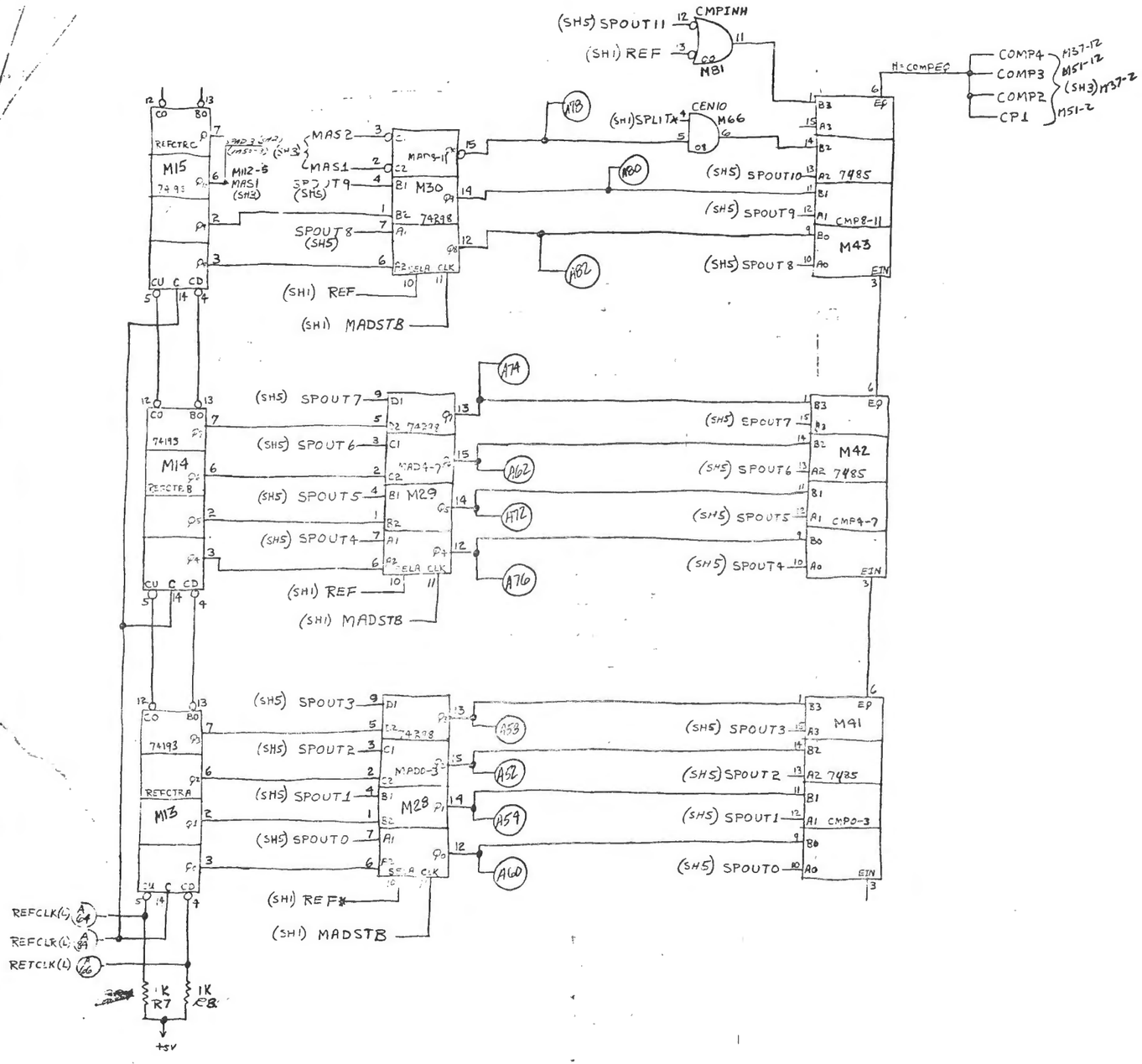
CLUSTER 047-37-01-001
SMCTU II

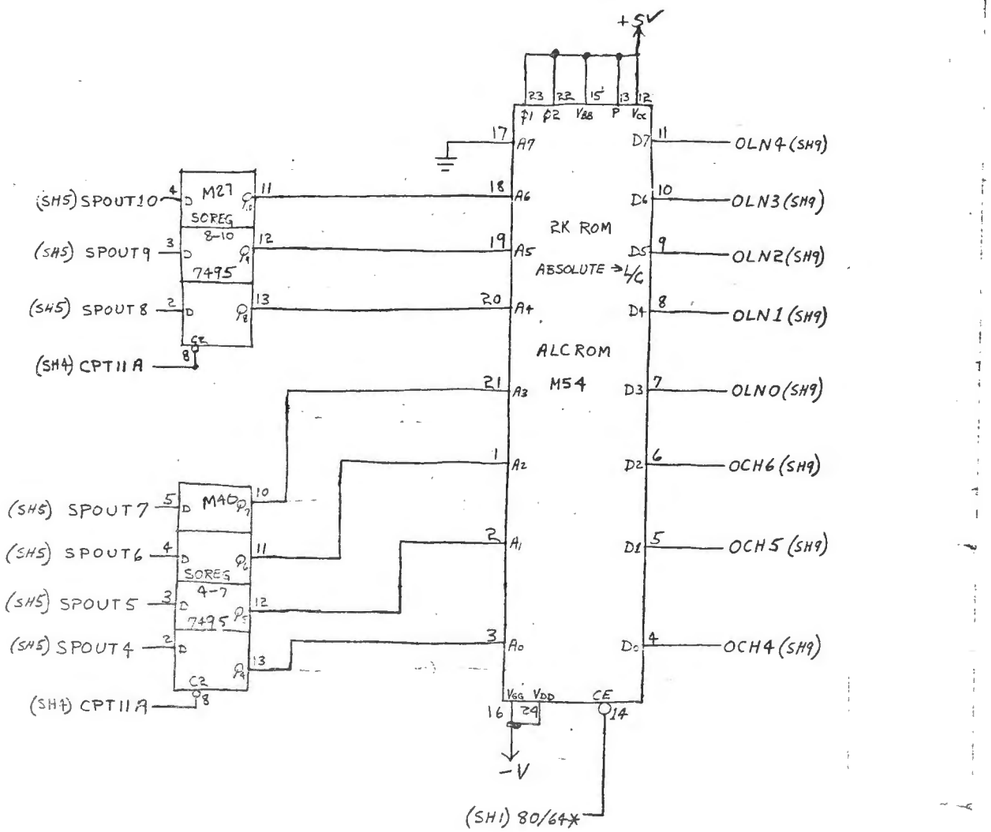
REV E
SH3 M


CLKSTP1
CLKSTP2
B40
B39
10K R5
10K R6
+5V
TURT4I
TURT4
B79
HI/LAST HALF CYCLE
CINH M
(SH3)
M22
STP1
STP2
(SH4) TUD906
(SH4) CPI33
REPDLY (SH2)
(SH8) OSCI
TUCNTR M16
74160
TEST CLR
B67
R12 1K
TURT4
TURT4A
7476
(SH4) CPI77
TUD90X
7442
M17
B46
B48
B44
B42
B15
B70
B14
B16
B18
B80
B52
B54
B58
B56
B6
B4
B8
B9
B19
B17
B22
B20
B34
B35
B36
B31
B66
B68
B72
B71
B38
B33
B32
CPI99
CPI77A (SH4)
CPI88
CPI77
TURT4A (SH4)
CRG10 (SH3)
LNMR3/6
LNMR0-3
COMP1 (SH2)
CPTIIA
CIOTII
WIDTII
(SH1)
(SH7)
(SH2)
B2 * (SH3) M47-4
B1 * (SH3) M47-10
B3 * (SH3) M47-1
M79-6 (SH8) MCNTP
M62-8 (SH4) LDTD
M62-9 (SH4) LDZD
M91-1 (SH1) MADSTB
M109-11 (SH2) WRENB
M109-10 (SH2) WRFCK
M19-9 (SH1) SPUR
M87-3 (SH2) CP1
M131-11 (SH1) SPUR
M31-9 (SH1) SPUR
M79-11 (SH3) CPTOR*
M36-12 (SH3) SLOT5*
M87-11 (SH3) COMP2*
M31-10 (SH3) SPUR
M79-12 (SH3) SLOT4*
M79-13 (SH3) SLOT3*
M79-14 (SH3) SLOT2*
M79-15 (SH3) SLOT1*
M79-1 (SH3) SLOT0*
M79-2 (SH3) ILOCK*
M79-3 (SH3) CPTIIA*
M79-4 (SH3) CPTCLR*
M79-5 (SH3) CPTSTR*
M79-6 (SH3) CPTEN*
M79-7 (SH3) CPTSEL*
M79-8 (SH3) CPTSTB*
M79-9 (SH3) CPTRST*
M79-10 (SH3) CPTDIR*
M79-11 (SH3) CPTCLK*
M79-12 (SH3) CPTSTP*
M79-13 (SH3) CPTSTR*
M79-14 (SH3) CPTEN*
M79-15 (SH3) CPTSEL*
M79-1 (SH3) CPTSTB*
M79-2 (SH3) CPTRST*
M79-3 (SH3) CPTDIR*
M79-4 (SH3) CPTCLK*
M79-5 (SH3) CPTSTP*
M79-6 (SH3) CPTSTR*
M79-7 (SH3) CPTEN*
M79-8 (SH3) CPTSEL

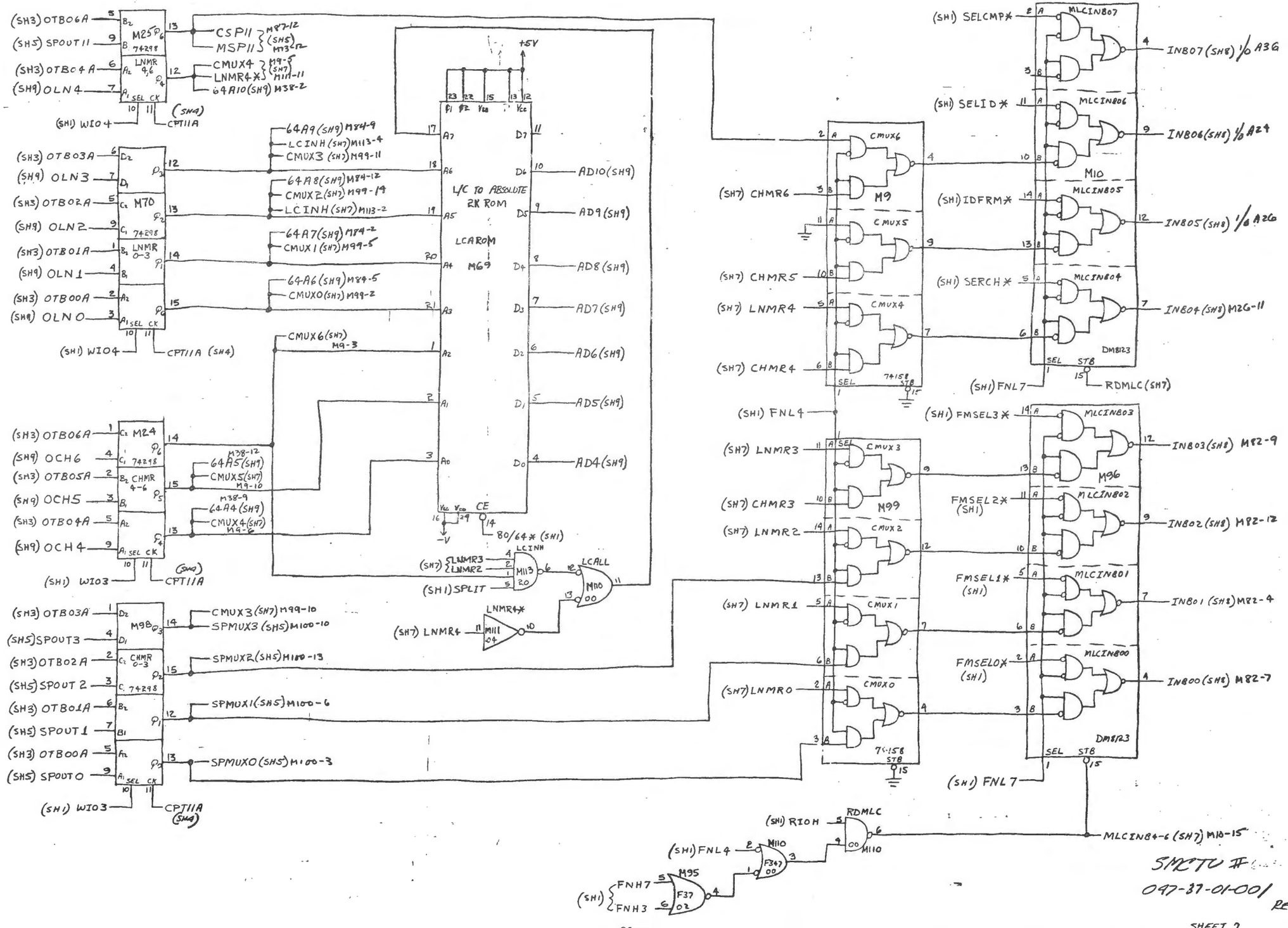
(SH5) SP11 — SPOUT11 — CMPINH (SH6) M11-12 — LNMR6 (SH7) M25-9
L=BOUT — BOUTI (SH2) M111-9
MAS2 (SH3) M112-2 — 64L4 (SH9) M26-9 — CMP10 — SOREG10 (SH6) M27-9
(SH5) SPL1T — SPOUT10 — M95
(SH5) SP10 — SPOUT9 — M58
(SH5) SP9 — SPOUT8 — M58
(SH5) SP8 — CMP9 — SOREG9 (SH6) M27-8 — MAD9 — CMP8 — SOREG8 (SH6) M27-2 — MADS — 64L2 (SH9) M55-9
74193 — IDCTRC — M117 — CU L CD C
(SH1) LDID
ADDEC1O (SH2) M95-8
ADDEC2 (SH2) M114-11
ADDEC2 (SH2) M114-12
(SH9) AD10 — (SH9) AD9 — (SH9) AD8 — (SH3) SLOT1 — 74157 — SPMUX5-15 — M102 — SELB STB
MSP10 (SH5) M73-16
MSP9 (SH5) M73-6
MSP8 (SH5) M73-4
(SH1) SPWR
(SH7) LNMR6 — SPAD4 (SH2) — CSP8-11 — 7489 — M87 — ADO ADI AD2 AD3 — WE ME
(SH5) MSP11 — SP11 — SPOUT11 (SH5) M58-13
(SH5) MSP10 — SP10 — SPOUT10 (SH5) M95-2
(SH5) MSP9 — SP9 — SPOUT9 (SH5) M58-5
(SH5) MSP8 — SP8 — SPOUT8 (SH5) M58-3
+5V — 1K — M58-1
(SH5) SP7 — SPOUT7 — M56
(SH5) SP6 — SPOUT6 — M56
(SH5) SP5 — SPOUT5 — M58
(SH5) SP4 — SPOUT4 — M58
64L1 (SH9) M55-2 — MAD7 — SOREG7 (SH6) M40-5 — CMP7 — M42-15
64LO (SH9) M55-12 — MADO — SOREG6 (SH6) M40-9 — CMP6 — M42-13
64C5 (SH9) M26-2 — MADS — CMP5 — SOREG5 M40-3
64C4 (SH9) M26-5 — MAD4 — CMP4 — SOREG4 — M45-7 LDID (SH1)
74193 — IDCTRB — M116 — CU L CD C
IDCTR7* (SH2) M111-1
ADC7 (SH2) M112-13
IDCTR6* (SH2) M111-3
ADC6 (SH2) M112-11
ADDEC2 (SH2) M114-6
ADDEC2 (SH2) M114-2
(SH9) AD7 — (SH9) AD6 — (SH9) AD5 — (SH9) AD4 — (SH3) SLOT1 — 74157 — SPMUX4-7 — M101 — SELB STB
MSP7 (SH5) M72-12
MSP6 (SH5) M72-10
MSP5 (SH5) M72-6
MSP4 (SH5) M72-4
(SH1) SPWR
SPAD4 (SH2) — CSP4-7 — 7489 — M86 — ADO ADI AD2 AD3 — WE ME
(SH5) MSP7 — SP7 — SPOUT7 (SH5) M56-5
(SH5) MSP6 — SP6 — SPOUT6 (SH5) M56-3
(SH5) MSP5 — SP5 — SPOUT5 (SH5) M58-9
(SH5) MSP4 — SP4 — SPOUT4 (SH5) M58-11
(SH5) SP3 — SPOUT3 — M56
(SH5) SP2 — SPOUT2 — M56
(SH5) SP1 — SPOUT1 — M56
(SH5) SP0 — SPOUT0 — M56
CMP3 (SH6) M41-15 — MAD3 (SH6) M28-9 — CHMR3 (SH7) M98-9
MAD2 — CMP2 — CHMR2 (SH7) M98-3
MAD1 — CMP1 — CHMR1 (SH7) M98-12
MADO — CMPO — CHMRO (SH7) M98-9
74193 — IDCTRA — M115 — CU L CD C
(SH1) CNTUP
(SH1) LDID
(SH1) CNTDWN
ADDEC2 (SH2) M114-1
ADDEC2 (SH2) M114-5
ADDEC2 (SH2) M114-3
ADDEC2 (SH2) M114-4
(SH7) CHMR3 — (SH7) CHMR2 — (SH7) CHMR1 — (SH7) CHMRO — (SH3) SLOT1 — 74157 — SPMUX0-3 — M100 — SELB STB
MSP3 (SH5) M71-12
MSP2 (SH5) M71-10
MSP1 (SH5) M71-6
MSPO (SH5) M71-4
(SH2) SPADO — (SH2) SPAD1 — SPAD3 (SH2) — SPAD2 (SH2) — CSPO-3 — 7489 — M85 — ADO ADI AD2 AD3 — WE ME
(SH5) MSP3 — SP3 — SPOUT3 (SH5) M56-9
(SH5) MSP2 — SP2 — SPOUT2 (SH5) M56-11
(SH5) MSP1 — SP1 — SPOUT1 (SH5) M56-1
MSPO (SH5) — SPO — SPOUTO (SH5) M56-13
(SH2) SPADO — (SH2) SPAD1 — (SH2) SPAD2 — (SH2) SPAD3 — 7489 — MSP8-11 — M73
(SH7) LNMR6 — (SH5) SPMUX10 — (SH5) SPMUX9 — (SH5) SPMUX8 — (SH5)
SP11 — SP10 — SP9 — SP8
(SH1) SPWR — SPAD1I (SH2)
(SH2) SPAD1 — SPAD2 — SPAD3 (SH2) — SPADO — 7489 — MSP4-7 — M72
SPMUX7 — SPMUX6 — SPMUX5 — SPMUX4 — (SH5)
SP7 — SP6 — SP5 — SP4
(SH1) SPWR — SPAD4I (SH2)
(SH2) SPAD1 — SPAD2 — SPAD3 (SH2) — SPADO — 7489 — MSPO-3 — M71
SPMUX3 — SPMUX2 — SPMUX1 — SPMUXO — (SH5)
SP3 — SP2 — SP1 — SPO
(SH1) SPWR — SPAD4I (SH2)

SMCTU II
097-37-0[illegible]001 M
SHEET 5 REV E



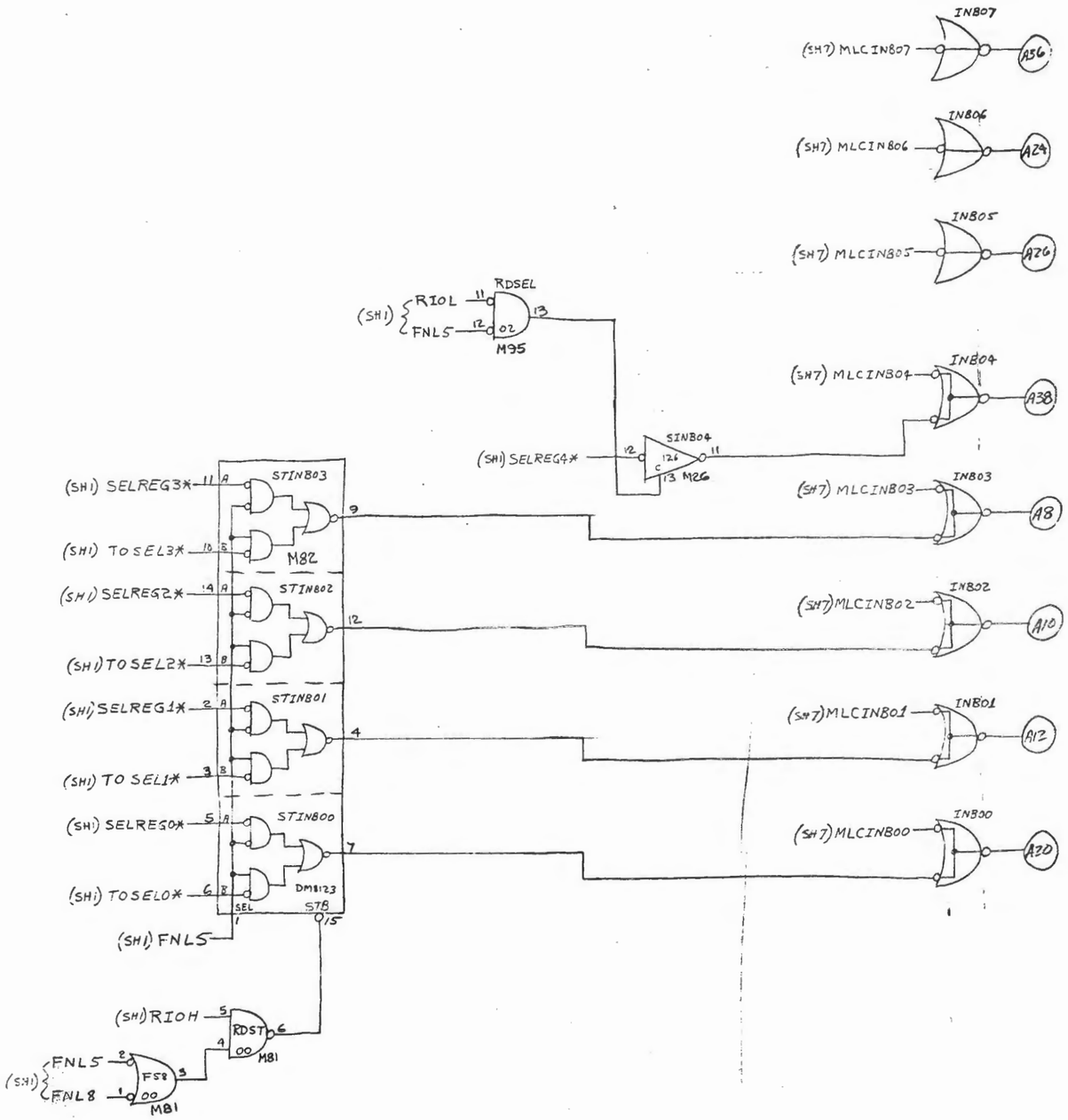


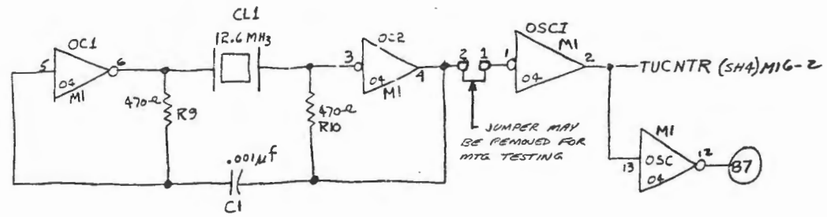
SMCTU II
047-37-01-001
REV. E
SHEET 1
M.

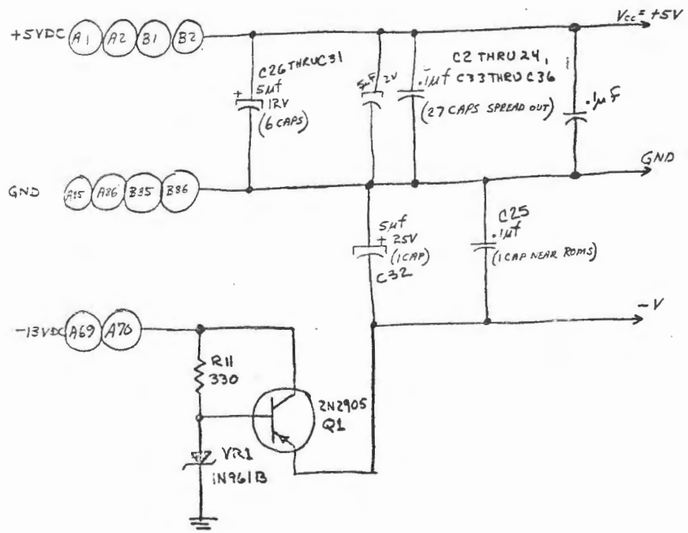


SMCTU #
097-37-01-001 REV E

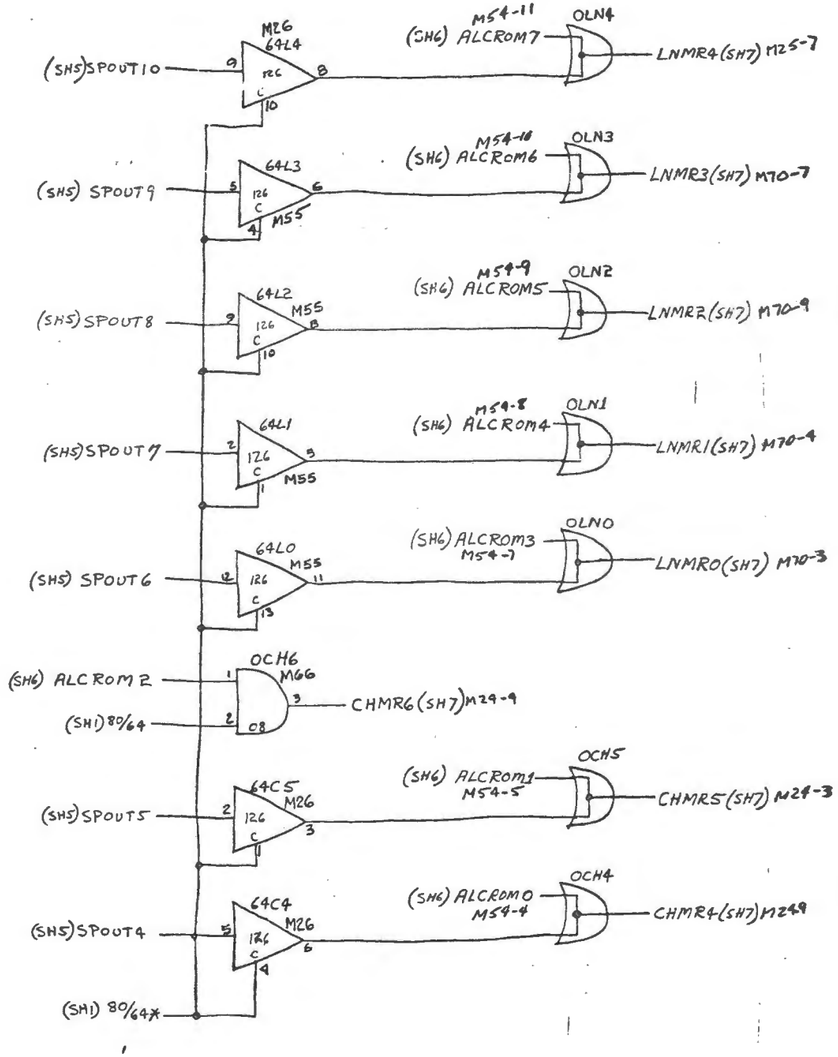
SHEET 7

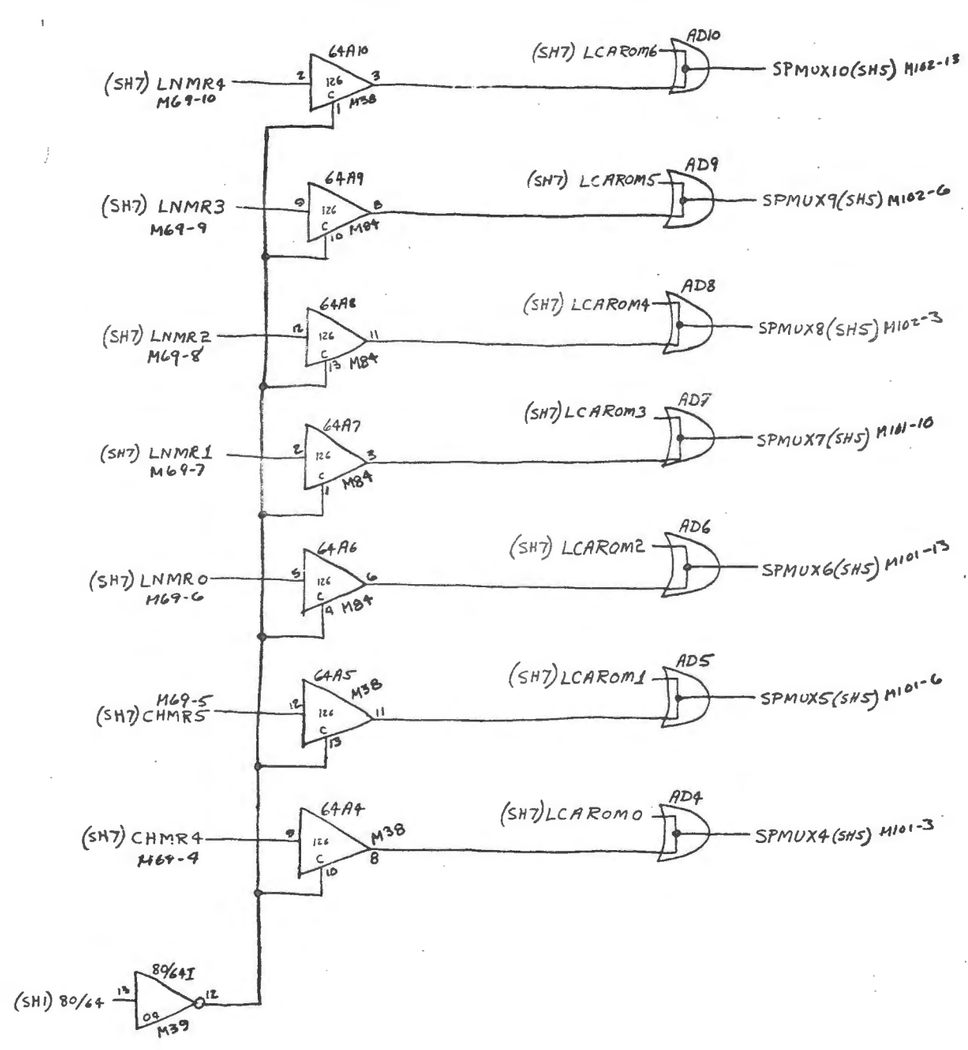






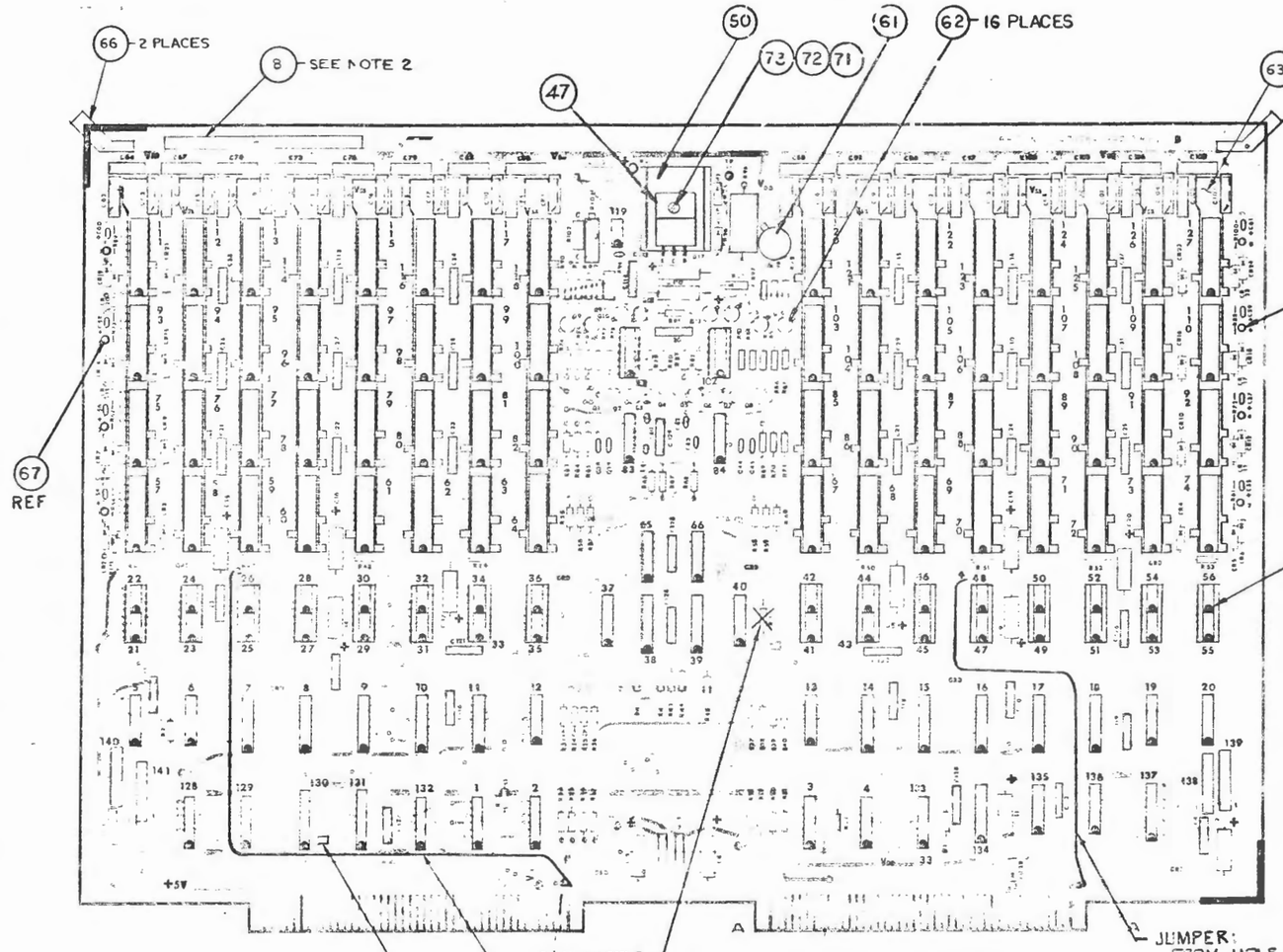
CLUSTER 047-37-01-001
SMCTU II REV. E
SHT. 8

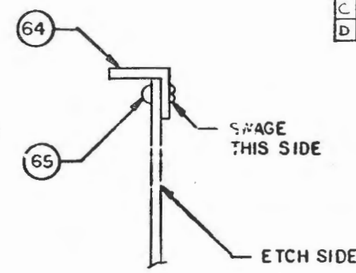

(SH5) SPOUT10
M26
64L4
12C
OLN4
(SH6) ALCROM7
M54-11
LNMR4 (SH7) M25-7
(SH5) SPOUT9
64L3
M55
OLN3
(SH6) ALCROM6
M54-10
LNMR3 (SH7) M70-7
(SH5) SPOUT8
64L2
M55
OLN2
(SH6) ALCROM5
M54-9
LNMR2 (SH7) M70-9
(SH5) SPOUT7
64L1
M55
OLN1
(SH6) ALCROM4
M54-8
LNMR1 (SH7) M70-4
(SH5) SPOUT6
64L0
M55
OLNO
(SH6) ALCROM3
M54-7
LNMRO (SH7) M70-3
(SH6) ALCROM2
OCH6
M66
(SH1) 80/64
CHMR6 (SH7) M29-9
(SH5) SPOUT5
64C5
M26
OCH5
(SH6) ALCROM1
M54-5
CHMR5 (SH7) M29-3
(SH5) SPOUT4
64C4
M26
OCH4
(SH6) ALCROMO
M54-4
CHMR4 (SH7) M29-9
(SH1) 80/64*

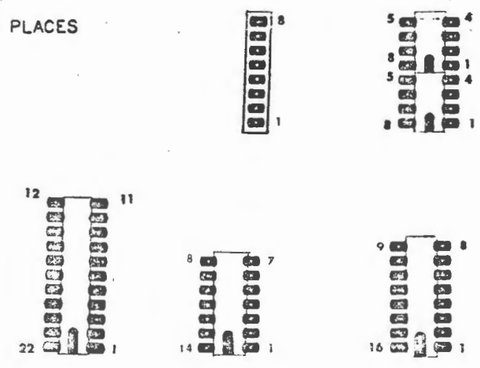

(SH7) LNMR4
M69-10
64A10
M38
AD10
(SH7) LCAROM6
SPMUX10 (SH5) M102-13
(SH7) LNMR3
M69-9
64A9
M84
AD9
(SH7) LCAROM5
SPMUX9 (SH5) M102-6
(SH7) LNMR2
M69-8
64A8
M84
AD8
(SH7) LCAROM4
SPMUX8 (SH5) M102-3
(SH7) LNMR1
M69-7
64A7
M84
AD7
(SH7) LCAROM3
SPMUX7 (SH5) M101-10
(SH7) LNMRO
M69-6
64A6
M84
AD6
(SH7) LCAROM2
SPMUX6 (SH5) M101-13
(SH7) CHMR5
M69-5
64A5
M38
AD5
(SH7) LCAROM1
SPMUX5 (SH5) M101-6
(SH7) CHMR4
M69-4
64A4
M38
AD4
(SH7) LCAROMO
SPMUX4 (SH5) M101-3
(SH1) 80/64
89/64I
M39

ADD JUMPER WIRE (ITEM 68) FROM	
A1	M130-1 TO M130-2

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	A.P.
A		ENGINEERING RELEASE		
B		RELEASED/ECO 3122		
	B1	ECO CHG 3471 10-24-74		
C		REVISED/ECO 3673 11/4/75		
D		REV/ECO 3829 1-29-75		







PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
60	M101,102 (SOCKET)
59	M21-36, 41-56 (SOCKET)
58	
57	
56	C38-45
55	C112
54	C11,17,18,110,111
53	C1,2,5,8,9,14,15,16,19,20,115
52	C3,4,6,7,C1,12,13,21-37,63,64, 66,68,69,70,72,73,75,76,78,79, 81,82,84,85,87,88,90,91,93,94, 96,97,99,100,102,103,105,106,108, 109,113,114, 8-29
51	C54-61
50	
49	
48	Q18
47	Q17
46	Q2,3,6,7,10,12,14,15
45	Q1,4,5,8,9,11,13,16
44	
43	
42	CR28
41	CR25,26,27
40	CR1-24
39	
38	R102
37	R101
36	R96
35	R94
34	R93
33	R77-84
32	R55-60,88-[illegible]4-76,90-92, 97-99,63-65,85-87
31	R45,66,67,68
30	R1-2,33-44,46-54,62, 73,89,61,72,88,100
29	R2
28	R1,95
27	M139,140
26	M138,141
25	M133
24	M129,135
23	M57,58,75,76,93,94,111,112
22	M7-10,15-18
21	M19
20	M21-24
19	M101,102
18	M[illegible]4,130,131,134,137
17	M[illegible]4
16	M38,39
15	M5,[illegible]9,40,40
14	M2,[illegible]3,132
13	M37
12	M28,136
11	M83,84
10	M65,66
9	
8	
7	
6	
5	
4	
3	
2	
1	

ITEM NO.	QTY	REFERENCE DESIGNATION	ITEM NO.	REF. DESIGNATION
-701	1	M73,74,91,92,109,110,126,127	2	M53-56
-702	1	M71,72,89,90,107,108,124,125	2	M49-52
-703	1	M69,70,87,88,105,106,122,123	2	M45-48
-704	1	M67,68,85,86,103,104,120,121	2	M41-44
-705	1	M63,64,81,82,99,100,117,118	2	M33-36
-706	1	M61,62,79,80,97,98,115,116	2	M29-32
-707	1	M59,60,77,78,95,96,113,114	2	M25-28
	ITEM NO.	REFERENCE DESIGNATION	ITEM NO.	REF. DESIGNATION
		047-15-10-701		EXPANSION KIT(-702-709)

ITEM NO.	QTY	REFERENCE DESIGNATION
7		C62,65,68,71,74,77,80,83,86,89,92,95,98,101,104,107
3		M57-63,67-31,85-100,103-118, 120-127 (SOCKET)
ITEM NO.		REFERENCE DESIGNATION
		BUSS STRIP SUB ASSEMBLY 047-34-02-701 (ITEM 63 REF)

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 8 AND MARK ASSY NO. AND LATEST ASSY REVISION.
3. PATTERNS MARKED "X" NOT USED : R3

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-16-03-701 REV B

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707
			A						

INCOTERM CORPORATION — 5 SHATTUCK ROAD, BUTLER, MASS. 01760

The information contained in this drawing is the property of INCOTERM CORPORATION, and is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM CORPORATION without written authorization and that no rights are granted to anyone to use any information contained in this document. This restriction does not limit the right to use information obtained from any other source.

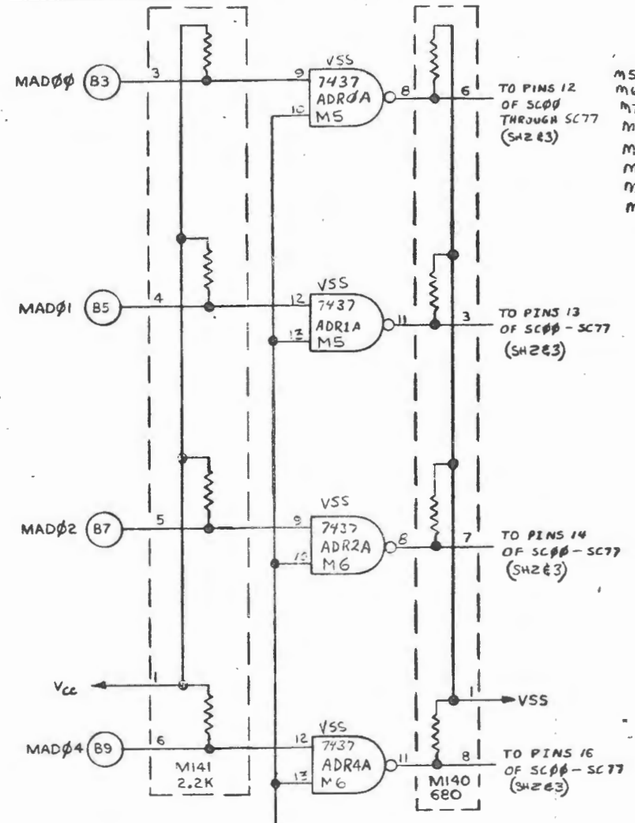
DRAWN — DATE
CHECKED — DATE
ENGINEER — DATE
APPROVED — DATE
PART USED ON

P.C. BOARD ASSY
SCREEN BUFFER II, ADDRESS BUFFER & INB BUSSING 701-708

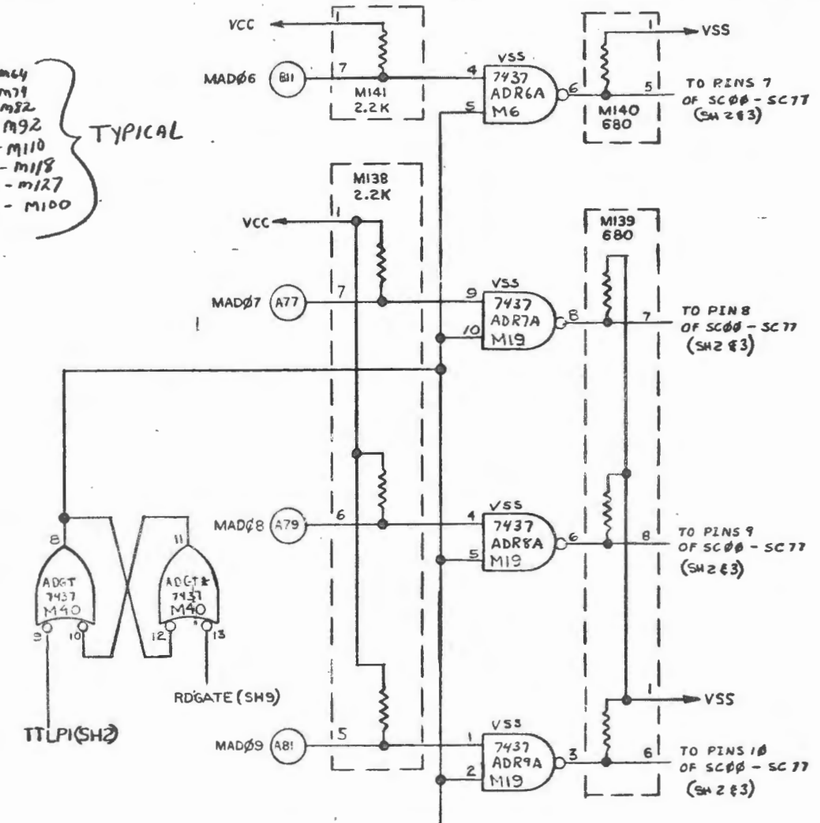
SIZE D | DOCUMENT NUMBER 047-36-02 | REV D

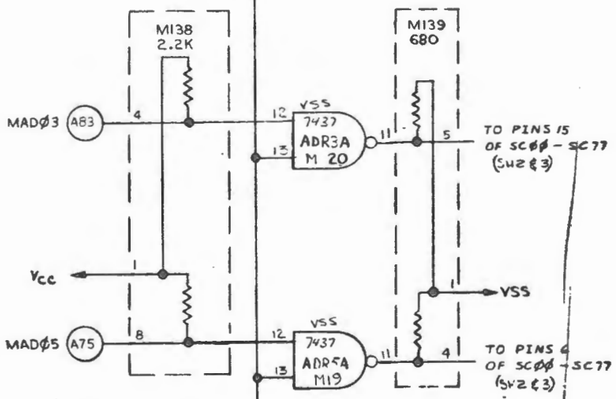
SCALE 1:1 | SHT 1 OF 1

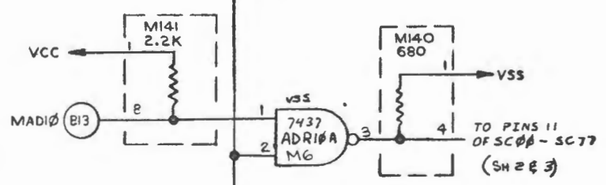
REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
A	ENGINEERING RELEASE 8-8-74		
B	RELEASED PER ECO #877		



M57 - M64
M67 - M79
M75 - M82
M85 - M92
M103 - M110
M111 - M118
M120 - M127
M93 - M100
TYPICAL







NOTES:

1. THE PLUS 5 VOLT SUPPLY FOR MOST TTL CIRCUITS IS VCC . EXCEPTIONS ARE SPECIFICALLY NOTED.
2. R3 NOT INSTALLED.
3. UNLESS OTHERWISE SPECIFIED:
   A. ALL DIODES ARE IN4148
   B. ALL RESISTORS ARE ¼W ±5%
   C. ALL CAPACITORS ARE .1µF@100V
4. —— Q17 IS MOUNTED TO A HEATSINK THERMALLOY NO. 6106-B-14

HIGHEST REF DES ASSIGNED				
CAP	DIODES	RES	TRANS	IC
C	CR	R	Q	M

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES						
			*01	*02	*03	*04	*05	*06	*07

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document contains the property of INCOTERM CORPORATION and is loaned subject to the agreement that it is not to be disclosed, used or duplicated in whole or in part for any purpose except for manufacture for anyone other than INCOTERM CORPORATION when authorized in writing by INCOTERM CORPORATION and that no rights are granted to disclose or use any information contained in this document. This restriction does not limit the right to use information contained in this document if it is obtained from another source.

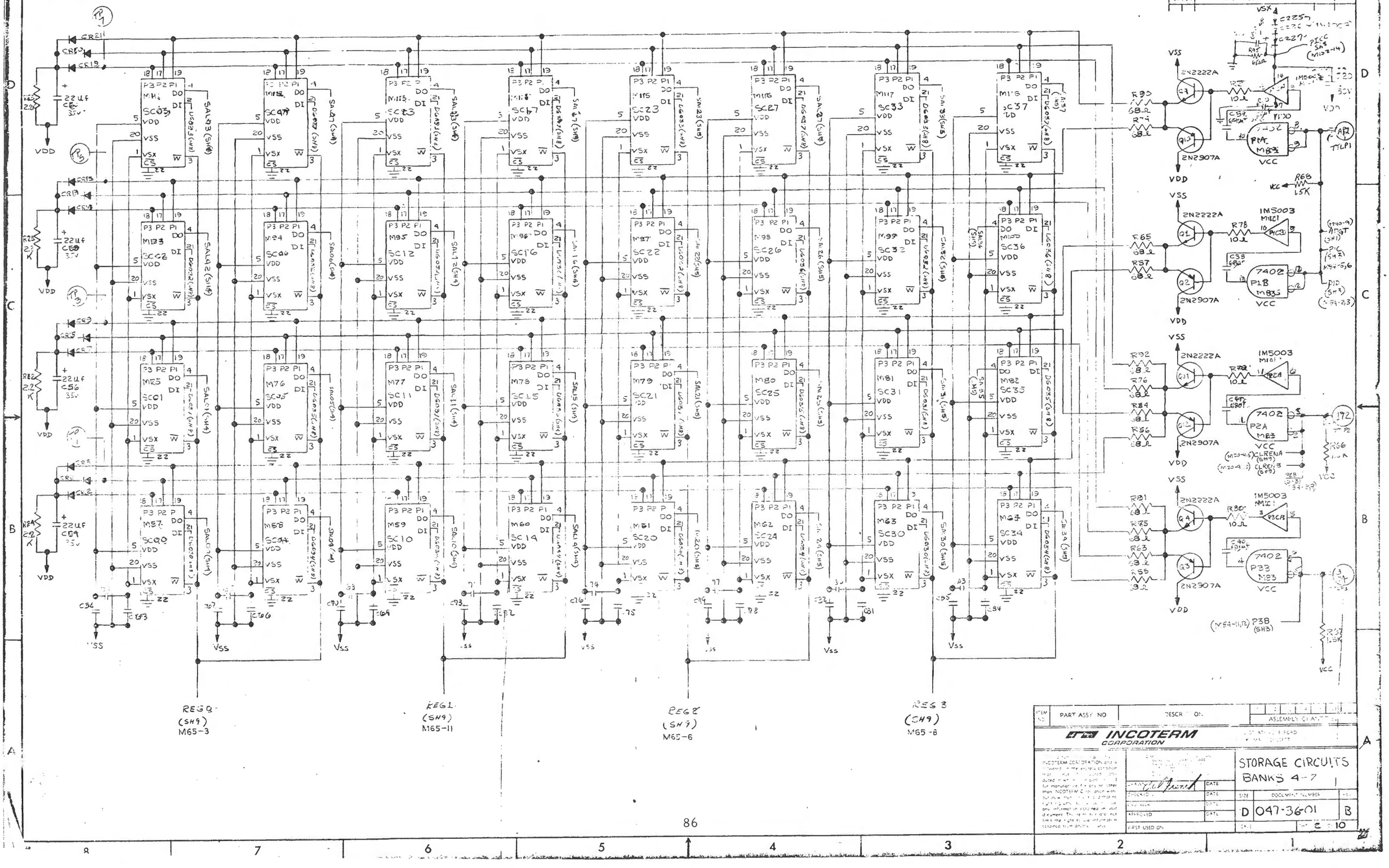
DRAWN	R. Brown	2/4/74
CHECKED	C. Hurst	2/4/74
ENG APPR	R. Brown	2/4/74
APPROVED		

NEXT USED ON 047-15-03-701

SCREEN BUFFER II: ADDRESS BUFFERS + INB BUSSING 001

SIZE	DOCUMENT NUMBER	REV
D	047-36-01	B

SCALE | SHT 1 OF 10


REG 0
(SH9)
M65-3
REG 1
(SH9)
M65-11
REG 2
(SH9)
M65-6
REG 3
(SH9)
M65-8
STORAGE CIRCUITS
BANKS 4-7
INCOTERM CORPORATION
D 047-3601 B
SHT 2 OF 10
86

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

REG 4 (SN9) M66-8

REG 5 (SN9) M66-6

REG 6 (SN9) M66-11

REG 7 (SN9) M66-3

ITEM NO	PART ASSY. NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

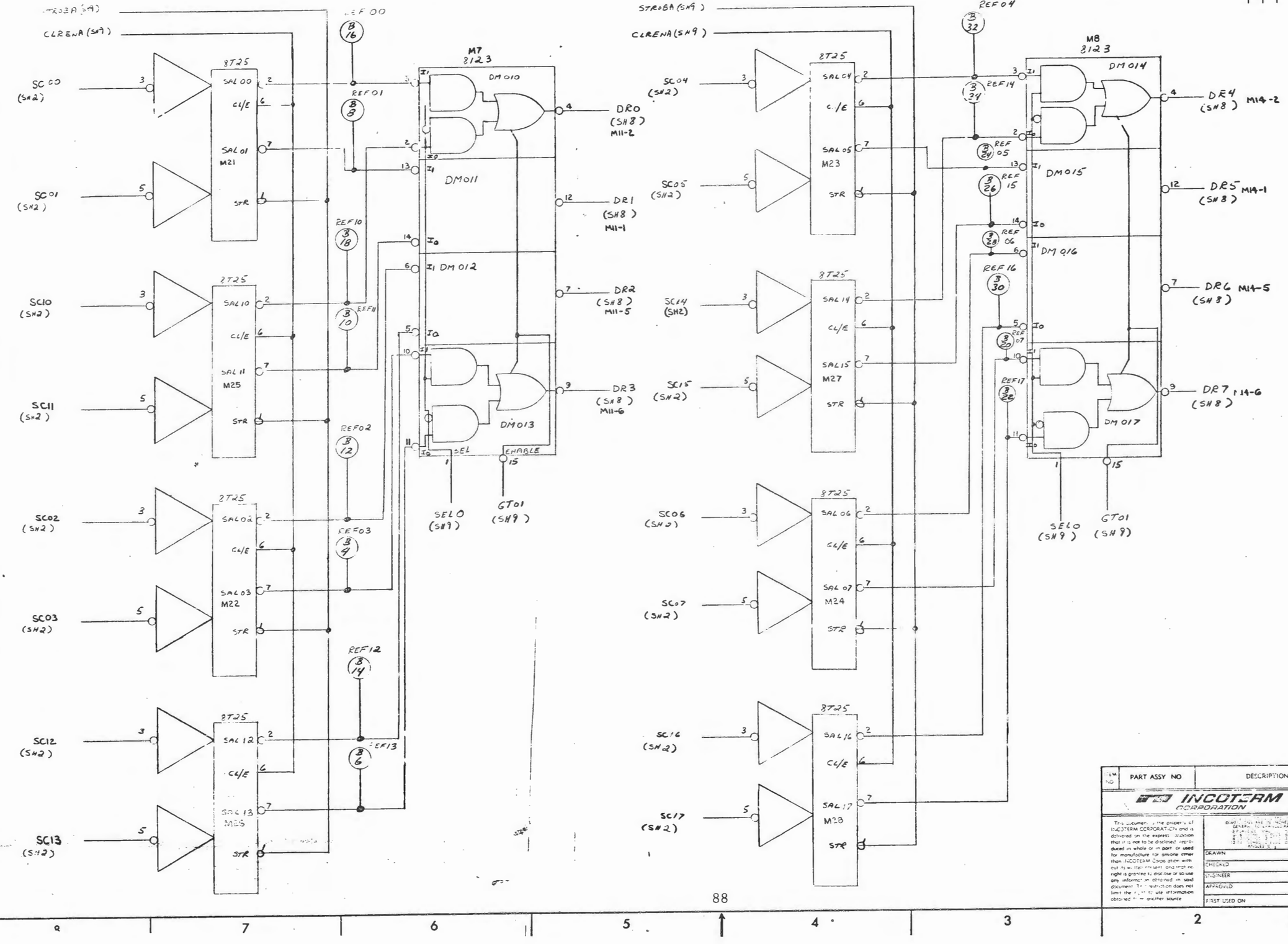
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for persons other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN [illegible] DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE
FIRST USED ON

TITLE: STORAGE CIRCUITS BANKS 4-7

SIZE	DOCUMENT NUMBER	REV
D	047-3601	B

SCALE SHT 3 OF 10



REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

ITEM NO	PART ASSY NO	DESCRIPTION	QTY	702	703	04		
			ASSEMBLY QTY					

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
.X ± .03
.XX ± .02
.XXX ± .010
ANGLES ± 1°

DRAWN	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

TITLE: SCREEN BUFFER DATA LOGIC BANKS 0 AND 1

SIZE	DOCUMENT NUMBER	REV
D	047-36-01	B

SCALE | SHT 4 OF 10

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

STROBA (SN9)
CLRENA (SN9)

SC20 (SN2)
SC21 (SN2)
SC30 (SN2)
SC31 (SN2)
8T25
SAL20
CL/E
SAL21
M29
STR
SAL30
SAL31
M33

REF 20 B 48
REF 21 B 40
REF 30 B 50
REF 31 B 42
REF 22 B 44

M9 8123
DM230
DM231
DM232
DM233
DR0 (SN8) M11-2
DR1 (SN8) M11-1
DR2 (SN8) M11-5
DR3 (SN8) M11-6
SEL
ENABLE
SEL0 (SN9)
GT23 (SN9)

SC22 (SN2)
SC23 (SN2)
SC32 (SN2)
SC33 (SN2)
SAL22
SAL23
M30
SAL32
SAL33
M34

REF 23 B 36
REF 32 B 46
REF 33 B 38

STROBA(SN9)
CLRENA(SN9)

SC24 (SN2)
SC25 (SN2)
SC34 (SN2)
SC35 (SN2)
SAL24
SAL25
M31
SAL34
SAL35
M35

REF 24 B 64
REF 34 B 66
REF 25 B 56
REF 35 B 58
REF 26 B 60
REF 36 B 62
REF 27 B 52
REF 37 B 54

MIO 8123
DM234
DM235
DM236
DM237
DR4 (SN8) M14-2
DR5 (SN8) M14-1
DR6 (SN8) M14-5
DR7 (SN8) M14-6
SEL
ENABLE
SEL0 (SN9)
GT23 (SN9)

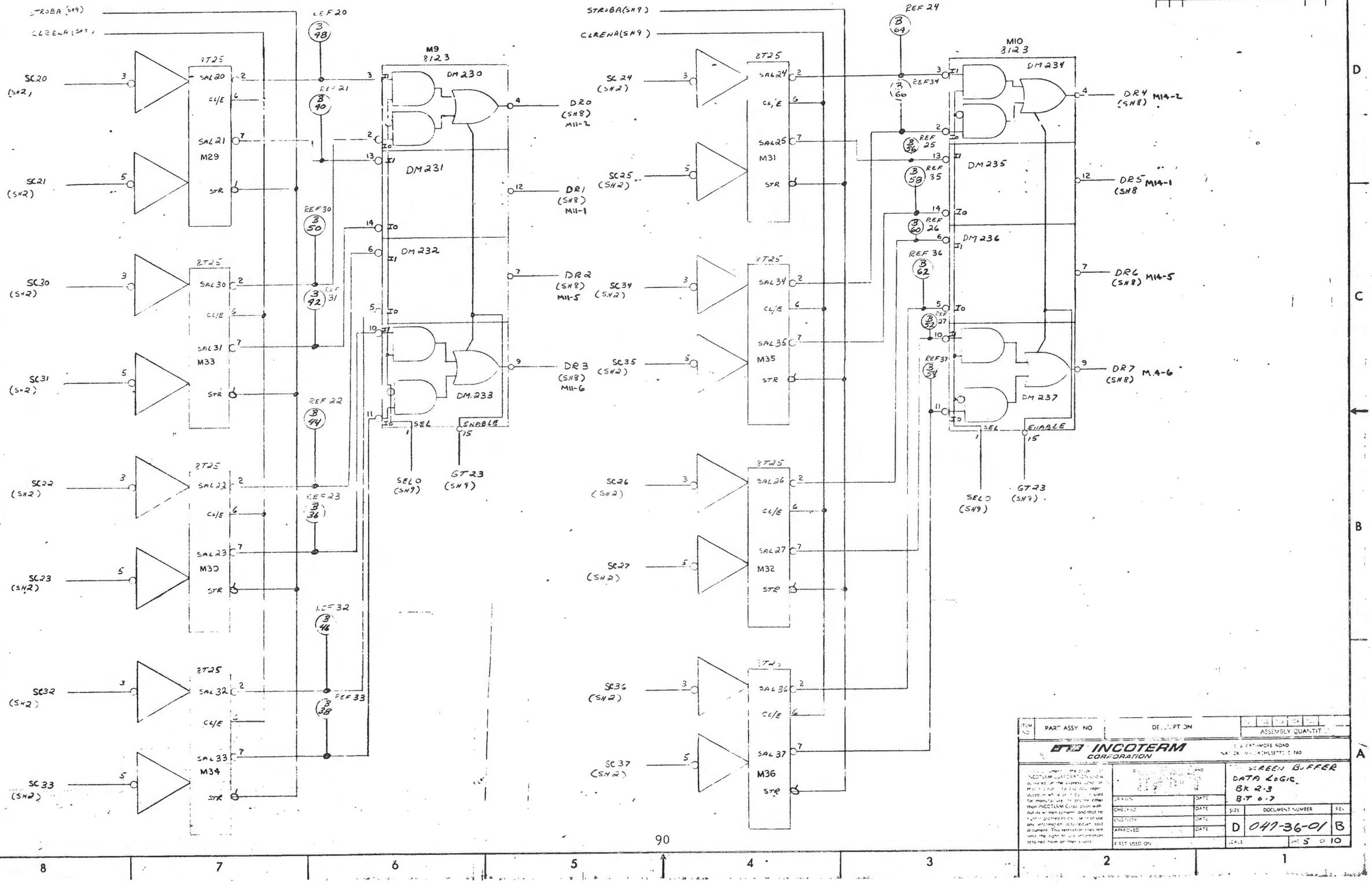
SC26 (SN2)
SC27 (SN2)
SC36 (SN2)
SC37 (SN2)
SAL26
SAL27
M32
SAL36
SAL37
M36

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK MASSACHUSETTS 01760

SCREEN BUFFER
DATA LOGIC
BK 2-3
BIT 0-7

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	041-36-01	B
ENGINEER	DATE			
APPROVED	DATE	SCALE	SHT 5 OF 10	



ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITY

INCOTERM CORPORATION — 533 FAIRMOUNT ROAD, NAUTICK, MASSACHUSETTS 01760

This document, the design, INCOTERM CORPORATION, is the property of the express consent of INCOTERM CORPORATION, and is not to be used in whole or in part for manufacture or purchase other than INCOTERM Corporation without its written consent, and that no rights are granted to others to use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN	DATE	SCREEN BUFFER DATA LOGIC BK 2-3 BIT 0-7	
CHECKED	DATE	SIZE	DOCUMENT NUMBER
ENGINEER	DATE	D	041-36-01
APPROVED	DATE	SCALE	SHT 5 OF 10
FIRST USED ON			

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APVL

STROBB (SH9)
CLRENB (SH9)
REF 40 (A 46)
REF 41 (A 36)
REF 50 (A 49)
REF 51 (A 38)
REF 42 (A 40)
REF 43 (A 32)
REF 52 (A 44)
REF 53 (A 34)

SC40 (SH3) — 8T25 SAL40 — CL/E — SAL41 — M41 — STR
SC41 (SH3)
SC50 (SH3) — 8T25 SAL50 — CL/E — SAL51 — M45 — STR
SC51 (SH3)
SC42 (SH3) — 8T25 SAL42 — CL/E — SAL43 — M42 — STR
SC43 (SH3)
SC52 (SH3) — 8T25 SAL52 — CL/E — SAL53 — M46 — STR
SC53 (SH3)

M15 8123
DM 450
DM 451
DM 452
DM 453
DR0 (SH8) M11-2
DR1 (SH8) M11-1
DR2 (SH8) M11-5
DR3 (SH8) M11-6
SEL0 (SH9)
GT45 (SH9)

STROBB (SH9)
CLRENB (SH9)
REF 44 (A 57)
REF 54 (A 59)
REF 45 (A 52)
REF 55 (A 51)
REF 46 (A 53)
REF 56 (A 55)
REF 47 (A 48)
REF 57 (A 50)

SC44 (SH3) — 8T25 SAL44 — CL/E — SAL45 — M43 — STR
SC45 (SH3)
SC54 (SH3) — 8T25 SAL54 — CL/E — SAL55 — M47 — STR
SC55 (SH3)
SC46 (SH3) — 8T25 SAL46 — CL/E — SAL47 — M44 — STR
SC47 (SH3)
SC56 (SH3) — 8T25 SAL56 — CL/E — SAL57 — M48 — STR
SC57 (SH3)

8123
DM 454
DM 455
DM 456
DM 457
M16
DR4 (SH8) M14-2
DR5 (SH8) M14-1
DR6 (SH8) M14-5
DR7 (SH8) M14-6
SEL0 (SH9)
GT45 (SH9)

ITEM NO	PART. ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

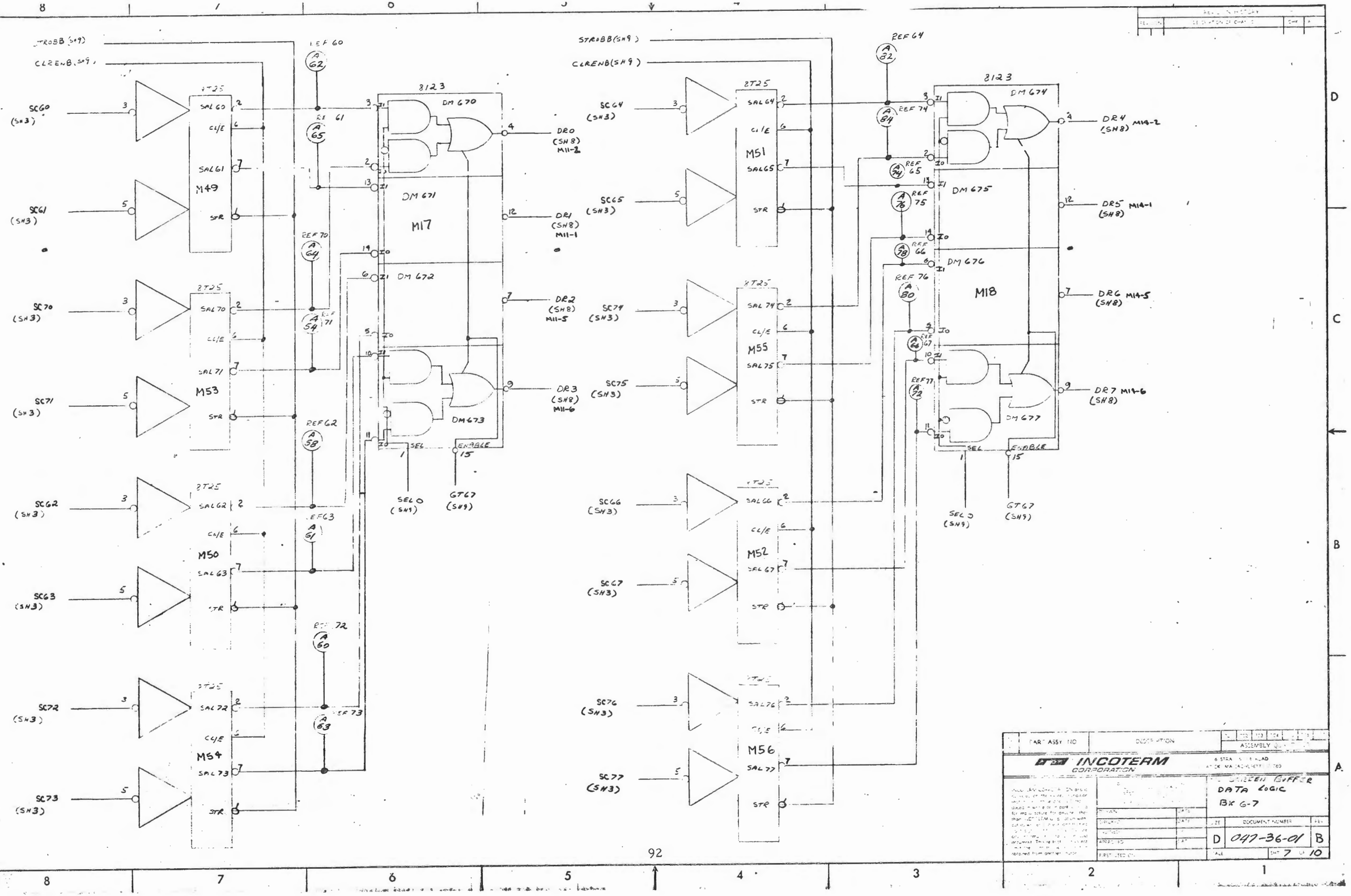
"This document is the property of INCOTERM CORPORATION and is to be held on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN	DATE
CHECKED	DATE
ENGINEER	DATE
APPROVED	DATE
FIRST USED ON	

TITLE: SCREEN BUFFER DATA LOGIC BR 4-5

SIZE	DOCUMENT NUMBER	REV.
D	097-36-01	B

SCALE — SHEET 6 OF 10



PART ASSY NO	DESCRIPTION	ASSEMBLY

INCOTERM CORPORATION

8 STRAIGHT BUFFER
DATA LOGIC
BX G-7

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED		D	047-36-01	B
ENGR'D		SCALE	SHT 7 OF 10	
APPROVED				

FIRST USED ON

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APP'D

74298

OTB00 (B 65) — M11 — DR0
OTB01 (B 57) — DR1
OTB02 (B 53) — DR2
OTB03 (B 68) — DR3

DM010 (SH4)
DM230 (SH5)
DM450 (SH6)
DM670 (SH7)
DM011 (SH4)
DM231 (SH5)
DM451 (SH6)
DM671 (SH7)
DM012 (SH4)
DM232 (SH5)
DM452 (SH6)
DM672 (SH7)
DM013 (SH4)
DM233 (SH5)
DM453 (SH6)
DM673 (SH7)

Vcc — R13 2.2K — (B 61) DMSEL
M14-10 (SH8) DR4-7
M37-9 (SH10) DMSELI
(SH9) RGIA

Vss — R15 2.2K — DG030 M2 — SC00 M57-21, SC10 59-21, SC20 61-21, SC30 63-21 (SH2)
R20 2.2K — DG470 M3 — SC40 M63-21, SC50 69-21, SC60 70-21, SC70 73-21 (SH3)
R17 2.2K — DG031 M2 — SC31 M82-21, SC21 79-21, SC11 77-21, SC01 75-21 (SH2)
R19 2.2K — DG471 M3 — SC41 M85-21, SC51 87-21, SC61 89-21, SC71 91-21 (SH3)
R16 2.2K — DG032 M2 — SC02 M33-21, SC32 95-21, SC22 97-21, SC12 95-21 (SH2)
R18 2.2K — DG472 M3 — SC42 M108-21, SC52 105-21, SC62 107-21, SC72 109-21 (SH3)
R14 2.2K — DG033 M2 — SC33 M87-21, SC23 85-21, SC13 83-21, SC03 81-21 (SH2)
R21 2.2K — DG473 M3 — SC43 M120-21, SC53 122-21, SC63 124-21, SC73 126-21 (SH3)

MK3 M130-3, CB3 M131-3, CMP3 M129-2 (SH10)

74125 IBF03 M1 — (B 47) INB03
74125 IBF02 M1 — (B 49) INB02
74125 IBF01 M1 — (B 53) INB01
74125 IBF00 M1 — (B 51) INB00

(SH10) M130-4 MK2, M129-12 CB2, M131-4 CMP2
(SH10) M130-7 MK1, M129-5 CB1, M131-7 CMP1
(SH10) M130-9 MK0, M129-9 CB0, M131-9 CMP0

74298

OTB04 (A 29) — M14 — DR4
OTB05 (A 26) — DR5
OTB06 (A 30) — DR6
OTB07 (A 28) — DR7

(SH4) DM014, (SH5) DM234, (SH6) DM454, (SH7) DM674
(SH4) DM015, (SH5) DM235, (SH6) DM455, (SH7) DM675
(SH4) DM016, (SH5) DM236, (SH6) DM456, (SH7) DM676
(SH4) DM017, (SH5) DM237, (SH6) DM457, (SH7) DM677

(SH8) DMSEL
(SH9) RGIA

RDDAT* (B 55)
Vcc — R22 2.2K

(SH10) M137-9 MK6, M134-7 CB6, M135-5 CMP6
(SH10) M137-3 MK5, M134-3 CB5, M135-1 CMP5
(SH10) M137-7 MK4, M134-9 CB4, M135-9 CMP4

Vss — R35 2.2K — DG034 M12 — (SW2) M64-21 SC34, 62-21 SC24, 60-21 SC14, 58-21 SC04
R38 2.2K — DG474 M13 — (SW3) M68-21 SC44, 70-21 SC54, 72-21 SC64, 74-21 SC74
R33 2.2K — DG035 M12 — (SW2) M82-21 SC35, 80-21 SC25, 78-21 SC15, 76-21 SC05
R37 2.2K — DG475 M13 — (SW3) M86-21 SC45, 88-21 SC55, 90-21 SC65, 92-21 SC75
R34 2.2K — DG036 M12 — (SW2) M100-21 SC36, 98-21 SC26, 96-21 SC16, 94-21 SC06
R39 2.2K — DG476 M13 — (SW3) M104-21 SC46, 106-21 SC56, 108-21 SC66, 110-21 SC76
R36 2.2K — DG037 M12 — (SW2) M118-21 SC37, 116-21 SC27, 114-21 SC17, 112-21 SC07
R40 2.2K — DG477 M13 — (SW3) M121-21 SC47, 123-21 SC57, 125-21 SC67, 127-21 SC77

MK7 M137-4, CB7 M134-4, CMP7 M135-12 (SH10)

74125 IBF07 M4 — (A 20) INB07
74125 IBF06 M4 — INB06 (A 18)
74125 IBF05 M4 — INB05 (A 16)
74125 IBF04 M4 — INB04 (A 14)

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

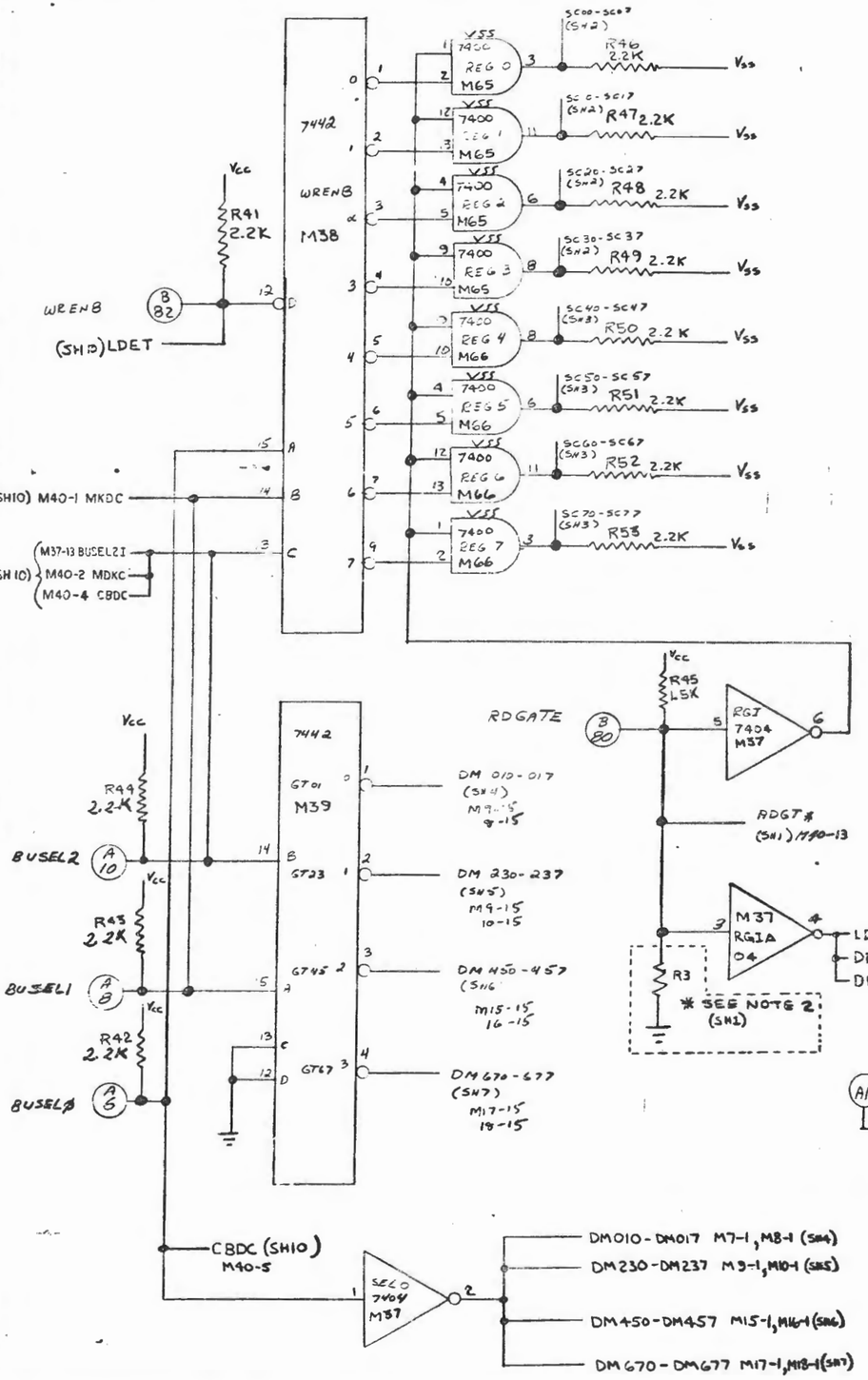
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

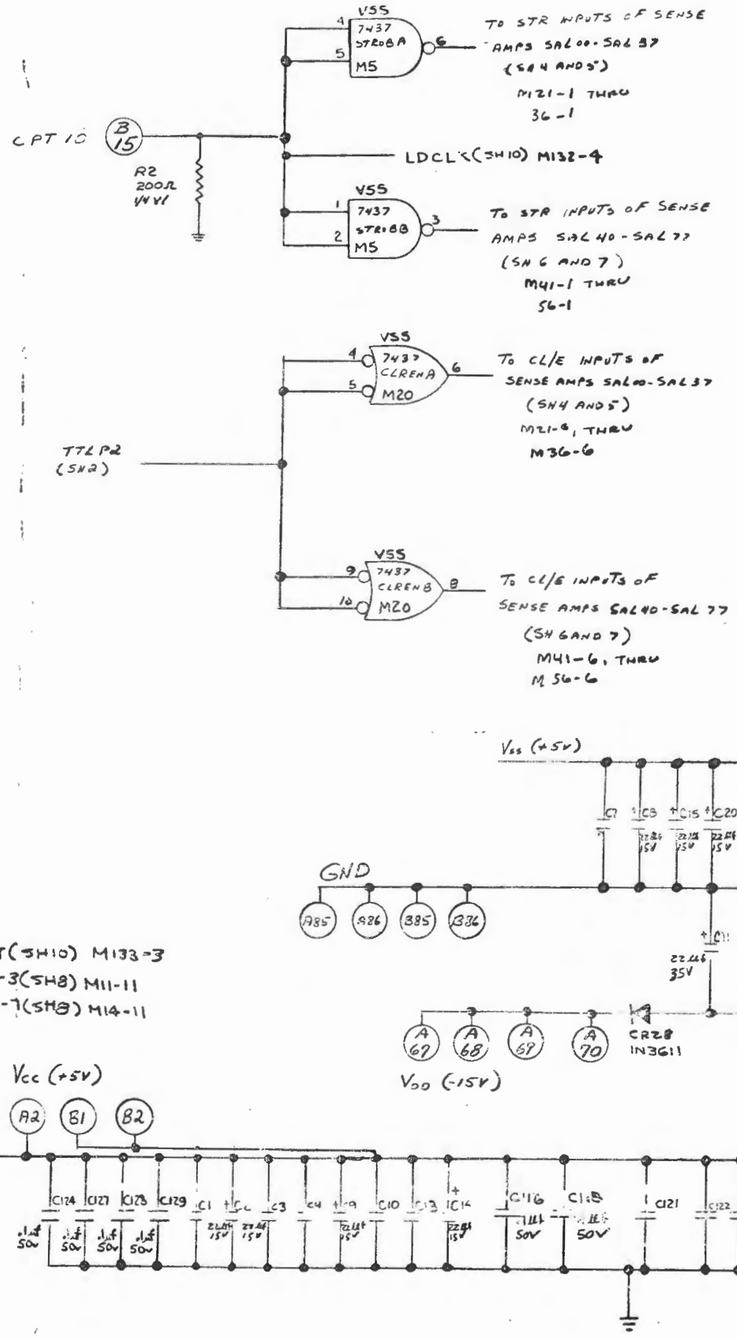
DRAWN	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

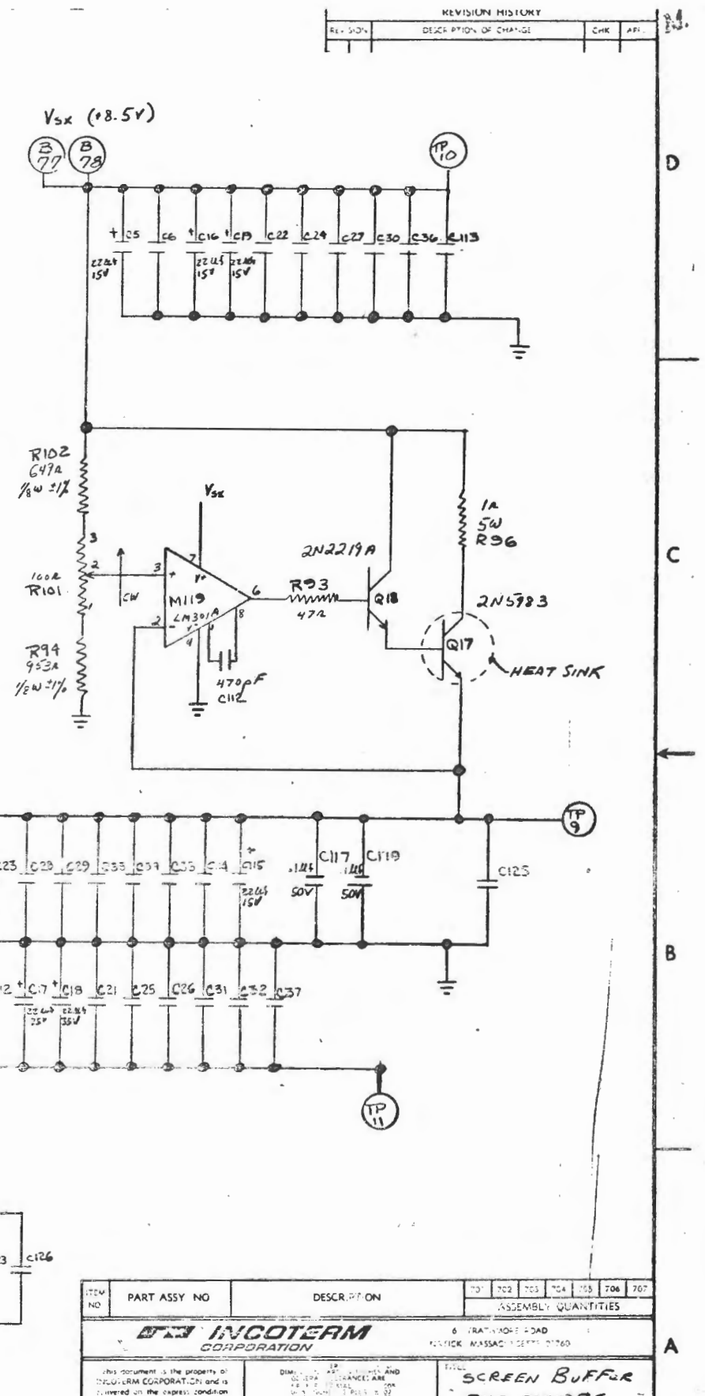
TITLE SCREEN BUFFER DATA MULTIPLEXERS

SIZE	DOCUMENT NUMBER	REV
D	047-36-01	B

SCALE — SHT 3 OF 10







ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION — 6 TRAFALGAR ROAD, HOLLIS, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

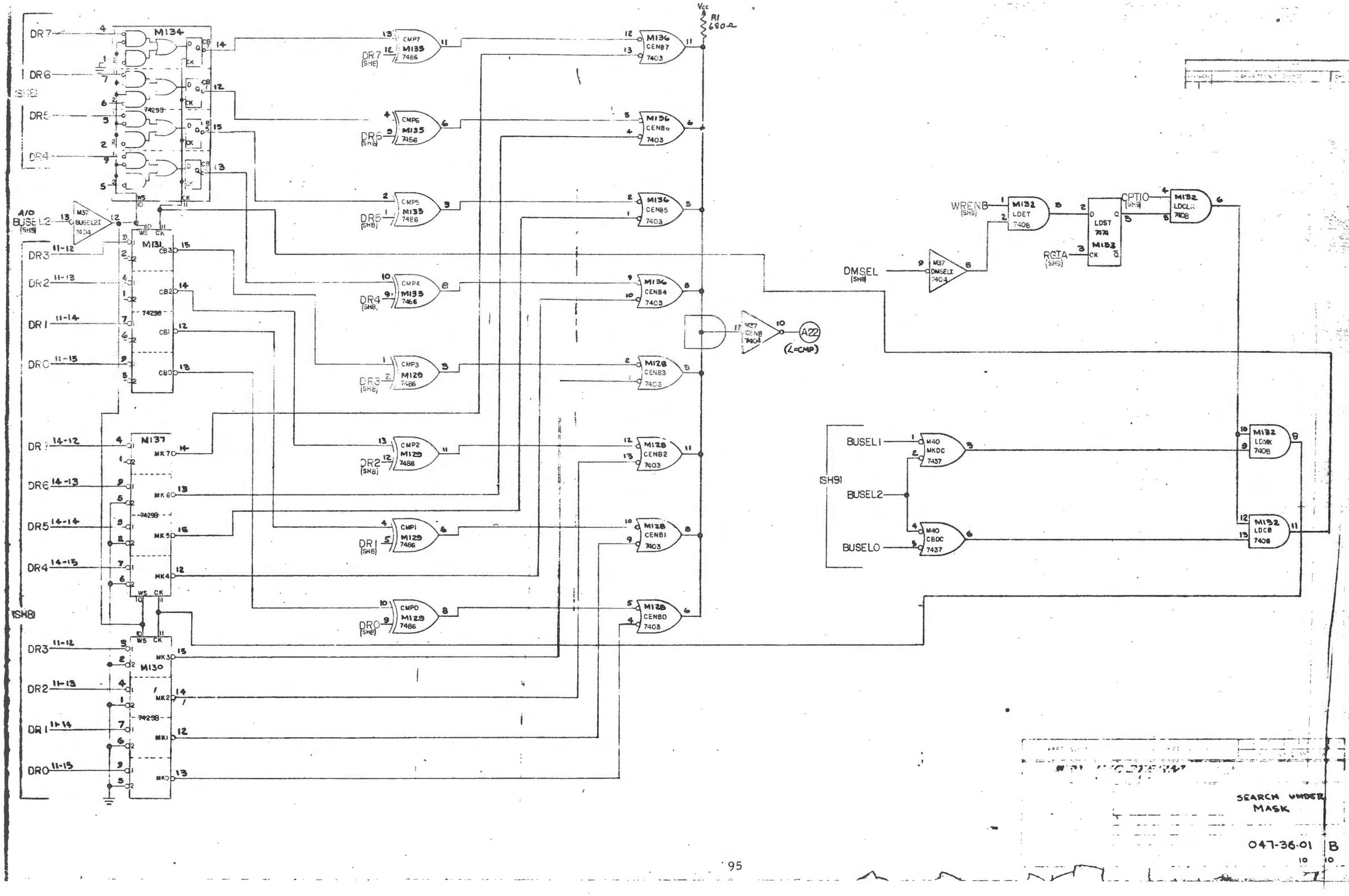
DIMENSIONS ARE IN INCHES AND TOLERANCES ARE: FRACTIONAL ±1/64, DECIMAL .X ±.03, .XX ±.02, .XXX ±.005, ANGULAR ±1°

DRAWN — DATE
CHECKED — DATE
ENGINEER — DATE 7-23-71
APPROVED — DATE
FIRST USED ON

TITLE: SCREEN BUFFER BUS DECODES

SIZE	DOCUMENT NUMBER	REV
D	047-36-01	B

SCALE — SHT 9 OF 10


DR7
DR6
DR5
DR4
DR3
DR2
DR1
DR0
M134
74299
M131
74298
M137
M130
M37 BUSEL2T 7404
A/D BUSEL2 (SH9)
WS
CK
CMP7 M135 7486
CMP6 M135 7486
CMP5 M135 7486
CMP4 M135 7486
CMP3 M129 7486
CMP2 M129 7486
CMP1 M129 7486
CMP0 M129 7486
M136 CENB7 7403
M136 CENB6 7403
M136 CENB5 7403
M136 CENB4 7403
M128 CENB3 7403
M128 CENB2 7403
M128 CENB1 7403
M128 CENB0 7403
Vcc
R1 680Ω
M27 CENB 7404
A22
(L=CMP)
DMSEL (SH9)
M37 DMSELI 7404
WRENB (SH9)
M132 LDET 7406
LDST 7474
M133
RGTA (SH9)
CPTIO (SH9)
M132 LDCLK 7408
BUSEL1
BUSEL2
BUSEL0
(SH9)
M40 MKDC 7437
M40 CBDC 7437
M132 LDMK 7408
M132 LDCB 7408
(SH8)
SEARCH UNDER MASK
047-36-01 B

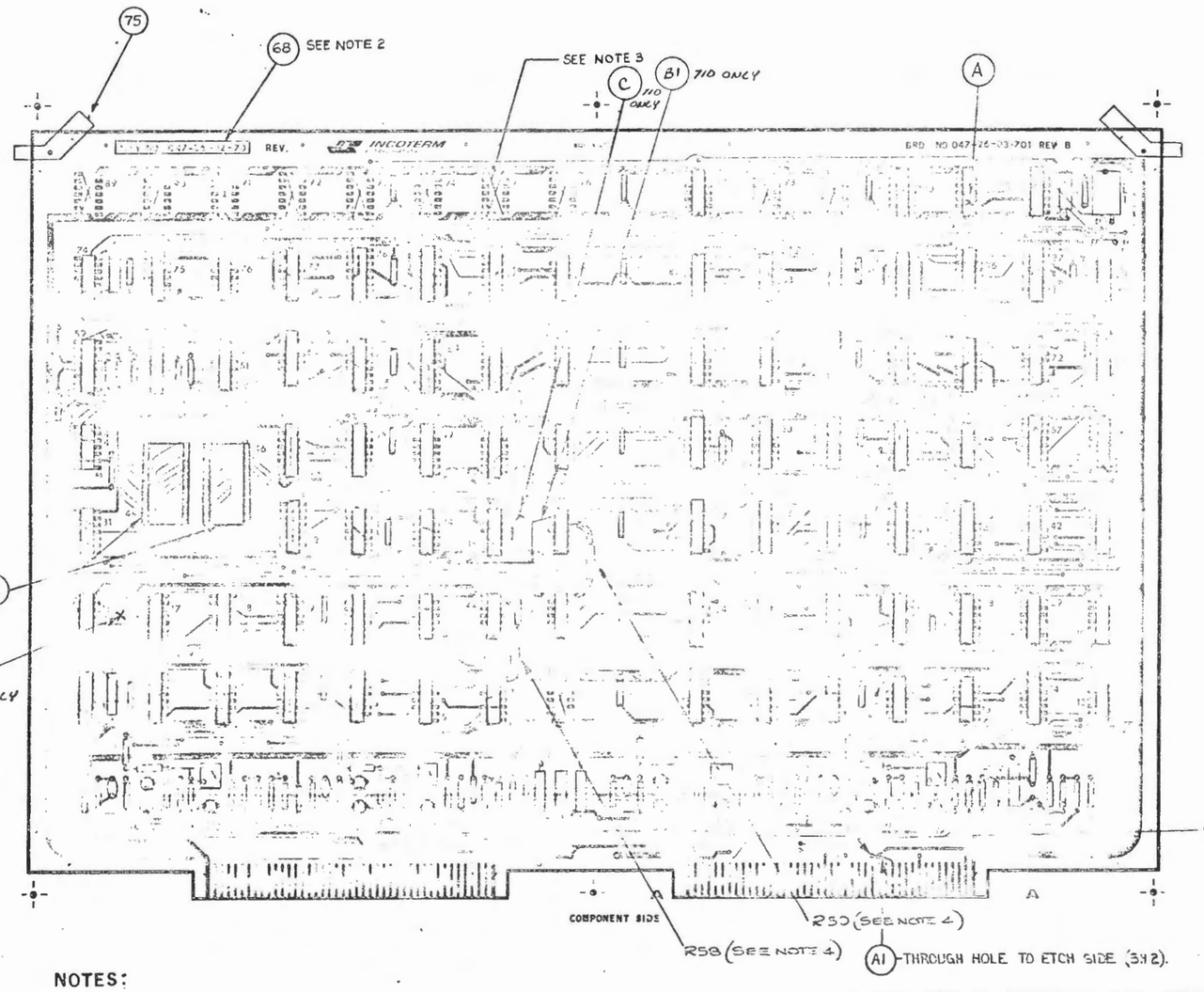
ITEM NO.	REFERENCE DESIGNATION
87	M45 (708 ONLY)
81	R1-12 B/20
80	R[illegible]
79	[illegible]
78	R[illegible]
77	R[illegible]
76	M45(706 ONLY
75	
74	M47(706 ONLY)
73	M[illegible]
72	M46(706 ONLY)
71	M45(706 ONLY 707 ONLY)
70	CL1
69	TB1,2,3,4,5
68	
67	
66	
65	
64	D1,R2,4
63	C6-C9 C15-18
62	C[illegible]
61	C5 C17
60	
59	
58	Q18
57	Q3,6,9,12
56	Q1,2,4,5,7,8,10,11
55	
54	CR17
53	VR4
52	VR3
51	VR1,2
50	CP1-3P,6
49	
48	R58,60
47	R45
46	R50-57
45	R42,43
44	R24,25,47-58
43	
42	R3,23,46,47
41	R44
40	R4,12,24,33
39	R2,22
38	R1
37	R49
36	
35	M12,14, [illegible]
34	M61,75
33	M[illegible]
32	
31	M1,2,3,4,5
30	M17,19,48,63
29	M47,[illegible]
28	M7
27	M[illegible],65
26	M9,[illegible]
25	M60,66,76,77
24	M53
23	M68
22	M35
21	M16
20	M54,[illegible],78,79 84,87
19	M51
18	M[illegible]97
17	M33,34,74,76
16	M27,28,29,30
15	M10
14	M23,31,83
13	M[illegible]
12	M59,44,70,85,100
11	M32,89
10	M12,18,36,81
9	M6,13,22,42,43,55,56,66
8	M[illegible]
7	M58
6	
5	
4	
3	
2	
1	

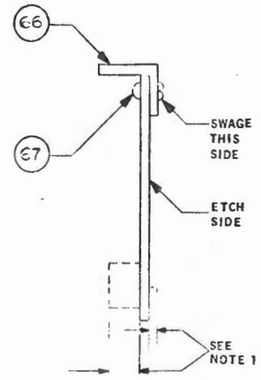
86	M46(707ONLY)
85	M45(707ONLY)

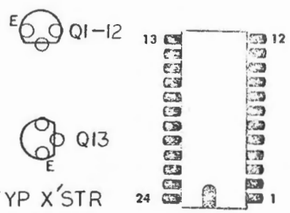
CUT E TO FROM
A M DIP TO B 21-1
B MIG-N TO M17-12 (706 ONLY)
C M58 INTO 6-9 (710 ONLY)

ADD JUMPER WIRES ITEM 83
A1 TO IN ACT TO (BOTTOM SIDE)
B1 M58-N TO M56-9 (710 ONLY)

B	[illegible]
C	[illegible]
C1	REVISED/ECO 3091A
D	REVISED/ECO 3273 [illegible]
D1	[illegible]
D2	REVISED/ECO 3346 [illegible]
D3	REV/ECO 3434 10-21-74
D4	REV/ECO 3631 12-3-74
D5	REV/ECO 3696 1-2-75
D6	REVISED/ECO 3822 [illegible]
D7	REVISED/ECO 3937 3-24-75







PIN NUMBERING AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ET H SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 68.
   AND MARK ASSY NO.047-26-02-701 AND LA ,SSY REVISION.
3. PATTERNS MARKED X ARE NOT USED.
4. ADD SLEEVING (ITEM 82) O.J RESISTORS R[illegible] R59 & CR17 TO PREVENT SHORTING TO ETCH
5. ATTACH JUMPER WIRES (ITEM 83) TO BOARD USING GLUE (ITEM 84) IN APPROXIMATE AREAS MARKED (O)
6. DRILL HOLE IN APPROXIMATE AREA SHOWN USING NO. 50 DRILL.

ASSEMBLE WITH ARTWORK 047-26-03-701 REV B

PART [illegible] NO

INCOTERM CORPORATION

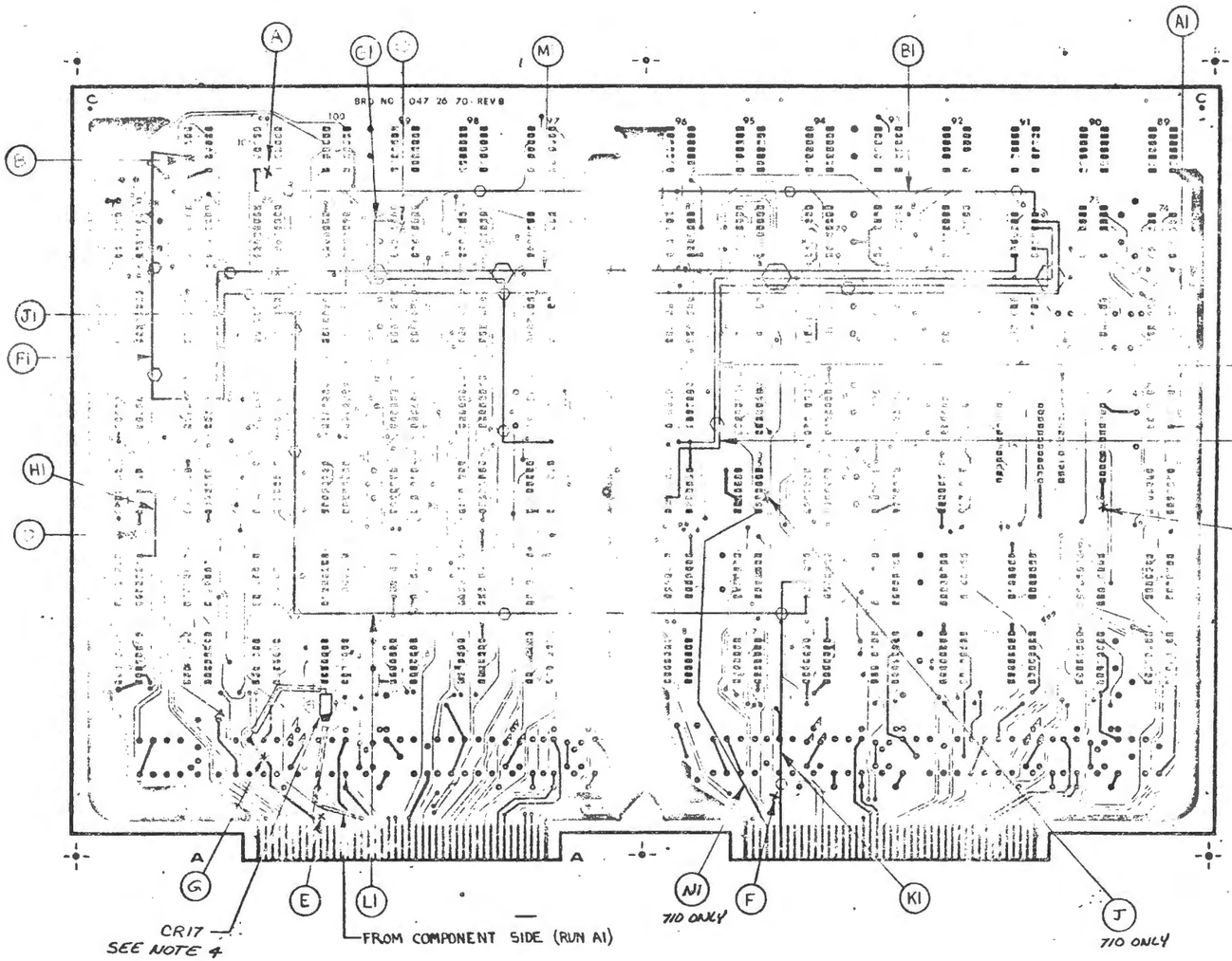
C. BOARD ASSY
REFRESH MASTER
64/80 708 THRU 710B

Jim [illegible]	2-3-74	
[illegible]	2/3/74	
[illegible]	2-3-74	
D	047-26-02	D7

96

CUT ETCH FROM		
A	M101-15 TO	EYELET
B	M102-2 TO	M102-3
C	M44-5 TO	EYELET
D	M30-10 TO	M42-11
E	I/O PIN A-8 TO	EYELET
F	I/O PIN B-16 TO	EYELET
G	I/O PIN A-70 TO	EYELET
H	M17-1 TO M1-5-13 (710 ONLY)	
J	AT M35-11 (710 ONLY)	

ADD JUMPER WIRES (ITEM 83)			
A1	M44-14	TO	+5v
B1	M76-8	TO	M101-1
C1	M44-2	TO	EYELET
D1	M76-10	TO	EYELET
E1	M76-13	TO	M102-3
F1	M57-5	TO	M102-3
G1	M44-5	TO	EYELET
H1	M[illegible]	TO	M30-10
J1	M57-9	TO	M44-9
K1	I/O PIN [illegible]	TO	M21-3
L1	M2-1	TO	M1-[illegible]
M1	M57-10	TO	M72-1
N1	M35-14 TO B80 (710 ONLY)		



ETCH SIDE

ASSEMBLE WITH ARTWORK 047-26-03-701 REV. B

ITEM NO	PART ASSY NO	DESCRIPTION	701	709	713	714	715	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION — 5 TRAFFIC ROAD, MARSHFIELD, MASSACHUSETTS 01050

P.C. BOARD ASSY.
64/80 REFRESH
MASTER 701B-710B

DRAWN	[illegible]	6-5-74	
CHECKED	[illegible]	6-19-74	DOCUMENT NUMBER
ENGINEER	[illegible]	7-19-74	D 047-26-02 P7
APPROVED	[illegible]	8-21-74	

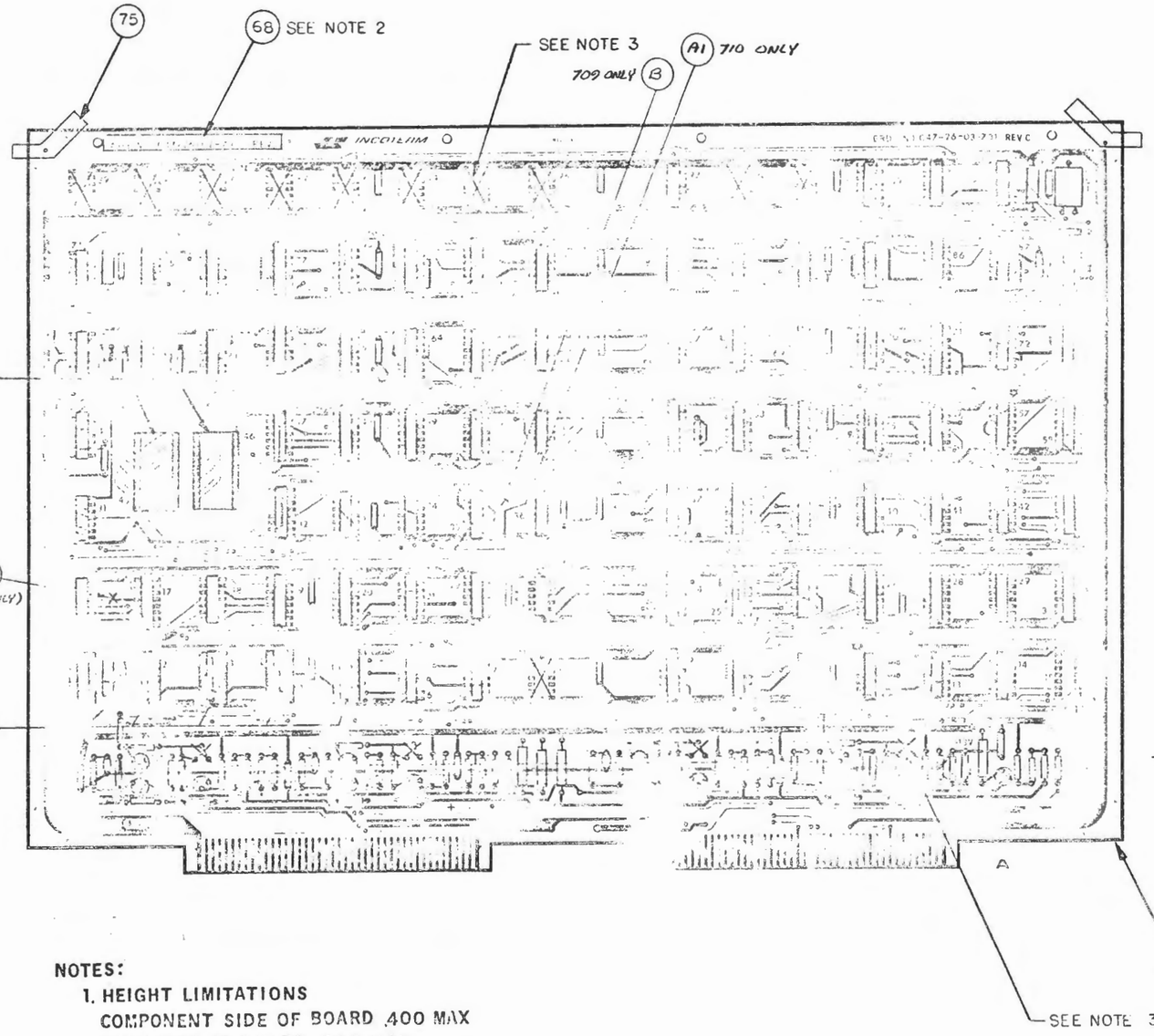
SHEET 1 OF 2 4

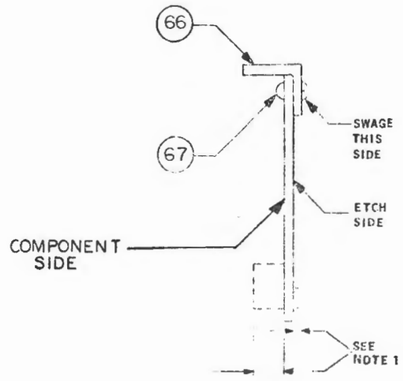
ITEM NO.	REFERENCE DESIGNATION
79	R9,18,29,38
78	R6,15,26,35
77	R5,7,14,16,25,27,34,36
76	
75	
74	M45 (705 ONLY)
73	M46 (704 ONLY)
72	M45 (703 ONLY)
71	M45-7[illegible] ONLY
70	CL1
69	M1,2,3,4,5(SOCKET)
68	
67	
66	
65	
64	C1,2,3,4
63	C6-9,C18-43
62	C10-16
61	C5,17
60	
59	
58	Q13
57	Q 3,6,9,12
56	Q1,2,[illegible]5,7,8,10,11
55	
54	CR17
53	VR4
52	VR3
51	VR1,2
50	CR1-CR16
49	
48	R58,59
47	R45
46	R50-57
45	R42,43
44	R12,21,32,41,48
43	
42	R3,23,46,47
41	R44
40	R4,13,24,33
39	R2,22
38	R1
37	R49
36	
35	M20,24,49,37,52,59,60
34	M61,75
33	M25
32	M45,46 (SOCKET)
31	M1,2,3,4,5
30	M17,19,48,63
29	M47,57,62
28	M7
27	M40,41,50,65
26	M9,14,15,38
25	M60,86,32,77
24	M53
23	M68
22	M35
21	M16
20	M64,69,71,73,79,84,87,78
19	M51
18	M72,97
17	M33,34,74,76
16	M27,28,29,30
15	M10
14	M23,31,83
13	M11,26,67,102
12	M39,44,70,85,100
11	M82,33
10	M12,18,36,81
9	M6,12,22,42,43,55,56,66
8	M21,101
7	M58
6	
5	
4	
3	
2	
1	

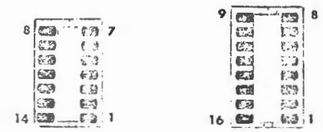
87	M45 (708 ONLY)
86	M16 (707 ONLY)
85	M45 (707 ONLY)
81	M[illegible],31,[illegible]
80	R10,19,30,39

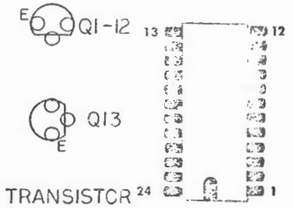
CUT ETCH FROM	
A	M10-4 TO M17-12 (703 ONLY)
B	M35-11 TO M36-9 (710 ONLY)

JUMPER (ETCH SIDE) FROM	
FR	M25-14 TO M26-9 (710 ONLY)









PIN NUMBERING AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 68
   AND MARK ASSY NO. 047-26-02-70- AND LATEST ASSY REVISION.
3. PATTERNS MARKED X ARE NOT USED.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-26-03-701 REV C

PART ASSY NO	DESCRIPTION

INCOTERM CORPORATION

P.C. BOARD ASSY
REFRESH MASTER
703 - 710

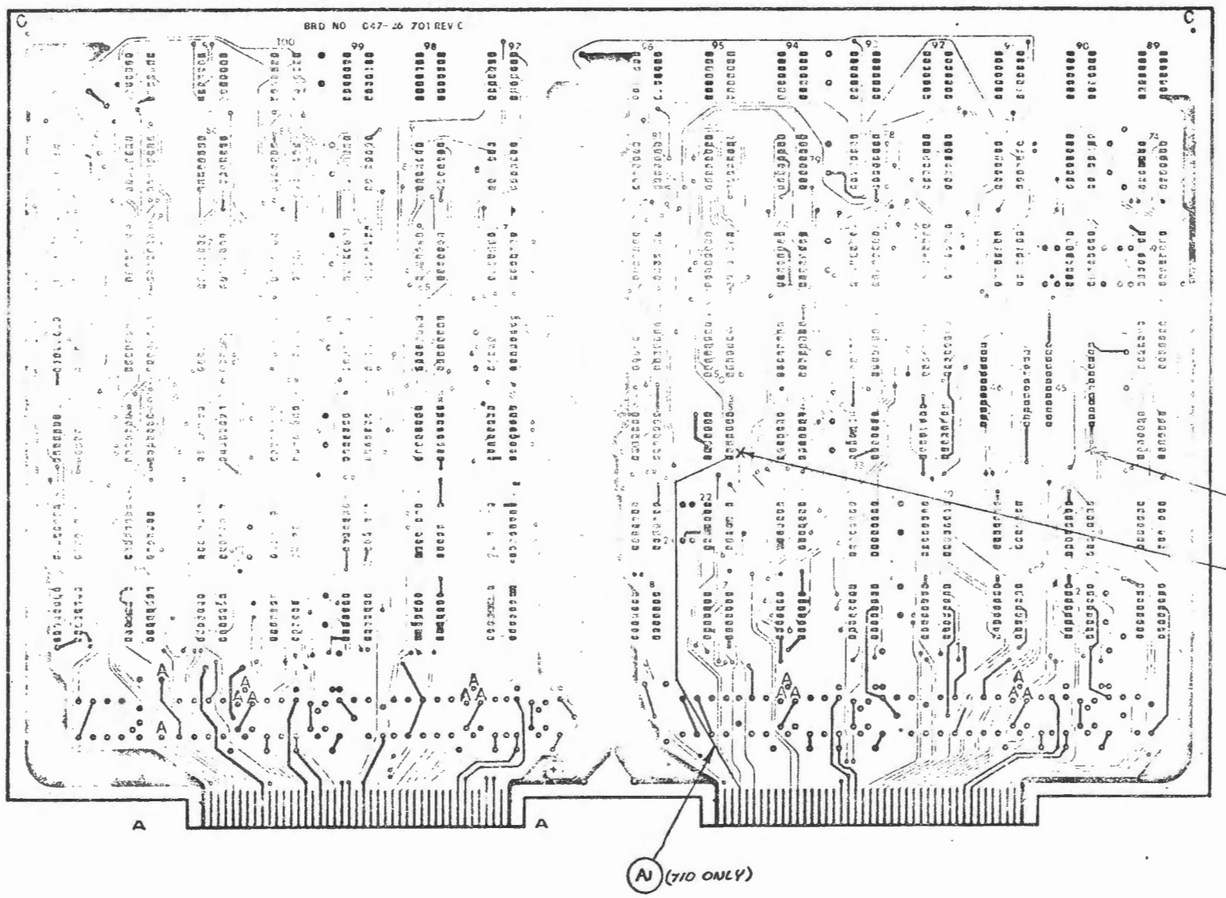
A. Dr. Gudzin	6-14-74		
Carl Lefevre	6/17/74		
G. Lopez	6/21/74	D	047-26-02

D7

1:1 3 4

98

8 7 6 5 4 3 2 1



ETCH SIDE

ASSEMBLE WITH ARTWORK 047-26-02-701 REV C

B	AT M35-11 (710 ONLY)	
A	M17-12 TO M45-18	(709 ONLY)
CUT ETCH FROM		

A1	M35-14 TO B80 (710 ONLY)	
ADD JUMPER (ITEM 83) FROM		

INCOTERM CORPORATION

P.C. BRD. ASSY.
REFRESH MASTER
64/80 701-710

D 047-26-02 DT

1:1 4 4

A	RELEASED	
B	REVISED PER ECO 3021	
C		6/14/74
E	REVISED ECO 3083	7/18/74
F	REVISED ECO 3412	11/12/74

KEEP ALL CIRCUITRY IN THIS AREA CLOSE

OSC1 74S04 M88 — OSC2 74S04 M88 — OSC3 74S04 M88

15.75MHz

R46 470 1/4W 5%

R47 470 1/4W 5%

CL1

C17 0.001 μF

C18 0.1 μF

+5V

AS CLOSE TO Vcc PIN OF IC AS POSSIBLE

SFSOSCB (SH3) M58-10

MTSR8* (SH2)

SFSOSC (SH3)

M51 SRLD 74S74

DSR1 (SH8)

DSR2 (SH8)

A10

SRLD*

MTSR5* (SH2)

MTSR2* (SH2)

SMRCK 7410 M67

B64

MTSR9* (SH2)

MTSR9A 74S04 M82

MTSR9AI 7404 M81

MTSR4* (SH2)

MTSR7* (SH2)

M51 SCLK 74S74

ROMENB (SH6)

SRDT* (SH5)

CAM1 (SH7)

CAM2 (SH7)

SYNCTRA (SH6) M76-2

SYNCTRB (SH6)

CSYOUT (SH6) M76-9

PBRI 74S04 M82

P3R 74S10 M67

CAM1 (SH7) M9-11

CAM2 (SH7) M7-11

MTSR2 (SH2)

LTI 7402 M22

MTSR6 (SH2)

LT2 7402 M22

SSRDT (SH5) M76-3

CPTI1

B84

CPTII1 7402 M22

CPTI5

B82

CPTI5I 7402 M22

R48 120Ω 1/4W

SPRT (SH5) M11-4

PRCLR (SH5) M11-11

B17

64/80 7404 M36

64/80I 7404 M36

SFCA (SH3) M58-1

SFCB (SH3)

SYFS (SH6)

RCCM (SH5) M15-9

SPTS (SH6) M76-10

SPTS (SH6) M76-13

SCLNCTRBQD (SH4)

SCLNCTRAQD (SH4)

LN248 (SH4)

SSYNP 7410 M67

SSYNPI (SH6)

HIGHEST REF DES USED

R23	M102	248	CPTI1	D13	VR4

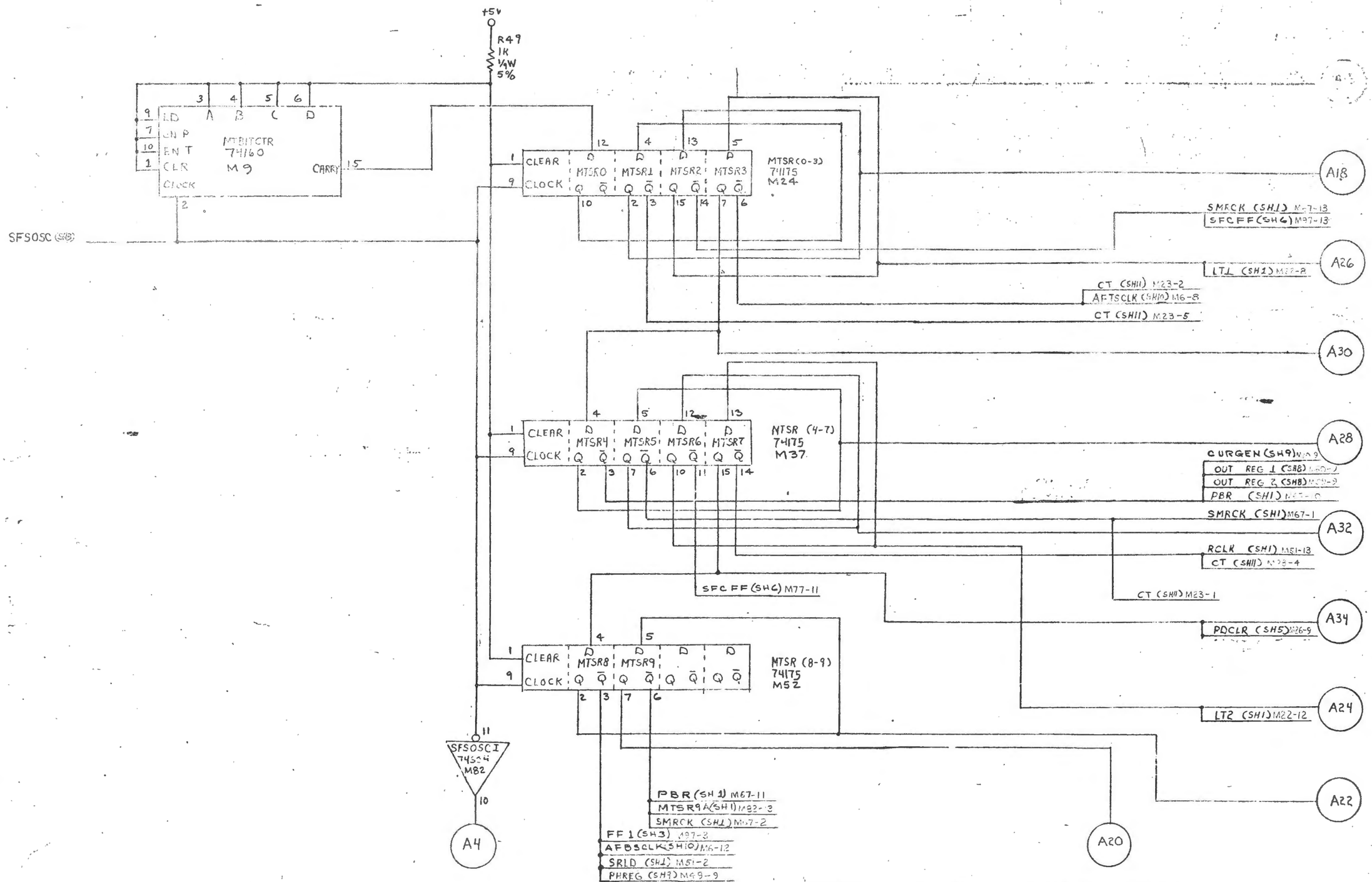
LEF DES NOT USED

M3, B8, 10, 71, 92, 93, 94, 95, 96, 98, 99

NOTES:

1. TO DISABLE ATTRIBUTES CUT ETCH AT MIT-IR (SEE SHEET 7)
2. TO OBTAIN SOLID CURSOR CUT ETCH & ADD JUMPERS ON SHEETS 4 & 7

D.R. 3/4/74
G.Z. 2/14/73
AB 2/21/74


+5V
R49
1K
¼W
5%
MTBITCTR
74160
M9
LD
ON P
ENT
CLR
CLOCK
CARRY
A
B
C
D
SFSOSC (SH8)
MTSR0
MTSR1
MTSR2
MTSR3
MTSR(0-3)
74175
M24
CLEAR
CLOCK
MTSR4
MTSR5
MTSR6
MTSR7
MTSR (4-7)
74175
M37
MTSR8
MTSR9
MTSR (8-9)
74175
M52
SFSOSCI
74S74
M82
A18
SMRCK (SH1) M67-13
SFCFF(SH6) M77-13
A26
LTL (SH1) M22-8
CT (SH11) M23-2
AFTSCLK (SH11) M6-8
CT (SH11) M23-5
A30
A28
CURGEN (SH9) M29-9
OUT REG 1 (SH8) M29-2
OUT REG 2 (SH8) M29-9
PBR (SH1) M67-9
A32
SMRCK (SH1) M67-1
RCLR (SH1) M51-13
CT (SH11) M28-4
SFC FF (SH6) M77-11
CT (SH11) M23-1
A34
PDCLR (SH5) M26-9
A24
LT2 (SH1) M22-12
A22
A20
PBR (SH1) M67-11
MTSR9A (SH1) M82-3
SMRCK (SH1) M67-2
FF1 (SH3) M97-8
AFBSCLK (SH10) M6-12
SRLD (SH1) M51-2
PHREG (SH9) M49-9
A4

M13-5 ASP2 (SH4)

MTCC1 74160 M15 — LD, ENP, ENT, CLOCK, A, B, C, D, Q_A, Q_B, Q_C, Q_D, CARRY

MTCC2 74160 M14 — LD, ENP, ENT, CLOCK, A, B, C, D, Q_A, Q_B, Q_C, Q_D, CARRY

FOLI 74S04 M88

MTSR9AI (SH1)

MTCDEC1 7442 M30 — A, B, C, D, outputs 0–9

MTCDEC2 7442 M29 — A, B, C, D, outputs 0–9

CH27 7402 M43 — CH34 7402 M43 — CH15 7402 M43 — CH04 7402 M43 — CH56 7402 M42 — CH78 7402 M42 — LN03 7402 M42

64/80I (SH1) M36-4

05C3 (SH1) M83-8

12.6MHZ A9

SELECT STROBE SFCA 74S257 M58 — 1A 1B, 2A 2B, 3A 3B, 4A 4B; SFSSS 2Y, SFSOSC 3Y, SFSLDC-L 1Y, SFSEOL 4Y

M9-2 MTBITCTR (SH2)
M24-3 MTSR(0-3) (SH2)
M37-9 MTSR(4-7) (SH2)
M52-3 MTSR(8-9) (SH2)
M82-11 SFSOSCI (SH2)
M51-3 SRLD (SH1)

M75-7 DSR1 (SH8)
M61-7 DSR2 (SH8)

SONF1 (SH6) M102-2

SCSRLDC, SCSRLDC+1, SCSRLDC+2, SCSRLDC+3, SCSRLDC+4, SCSRLDC+5 — SCSR 74174 M57 — CLEAR, CLOCK

M100-5 SRSA (SH11)
CSCT2 (SH6) M102-3

LCLK 74S04 M88

M40-2 SCLNCTRA (SH4)
SCLNCTRB (SH4)
LNCTCG (SH4)
AECG (SH10)
M48-10 ATTSTATTS (SH10)
M63-10 ATTSTATBS (SH10)

M87-6 VR (SH6)

SPTS[64] (SH6) M76-1
SPTS[80] (SH6) M76-9

FF1 7474 M97 — D, Q, CK — MTSRB* (SH2) — A40

FF2 7474 M72 — D, Q, CK — LOAI (SH4) — HR* (SH11) — A61

LN247 (SH4) M70-6
LN215 (SH4) M70-3
LN07 (SH4) M70-11
LN23 (SH4) M70-8
LN C/T (SH4)
LN 16/23 (SH4)

SELECT STROBE SFCB M36 74157 — 1A 1B, 2A 2B, 3A 3B, 4A 4B; L/RS 1Y, EVTS 2Y, RCLRS 3Y, BRFRS 4Y

PDCLR (SH5) M36-10
ATINH (SH11) M73-16
HR (SH11) M73-12

ATINH (SH11) M73-4
HR (SH11) M73-9

CRFR (SH5) M32-2
REFCLR (SH4) M85-1
VR (SH6) M87-12
VR (SH6) M87-9

SCLNCTRA 74163 M40

SCLNCTRB 74163 M41

SCLNDEC1* 7442 M27

SCLNDEC2* 7442 M28

M71 SCLNFF 7476

M71 9/E 7476

RTC 7400 M21

B76

VPS (SH11) M35-14

CHROMA (SH8) M45-8

CHROMB (SH8) M46-8

A60

CSCT2 (SH6) M102-4

CSCT1 (SH6) M102-11

CLI (SH3)

EOLI (SH3)

LOA A83

B26

B28

B30

CTCNB 7402 M56

CTCNA 7402 M56

COI 7402 M56

INCTCG 7402 M56

SDI5 7404 M12

SDI6 7404 M12

SCLNDEC1T 7404 M12

LOAT 7404 M12

LOI 7404 M12

L4I 7404

RTCLKCC 7402 M55

LOA 7402 M55

LN248 7402 M13

ISP2 7402 M13

M84-9 64DET(SH5)

CRFR (SH5) M39-1

SRSA (SH11) M100-4

RETCLK (SH5) M83-1

A66

A62

M7-5 VIDEO 1(SH9)

M7-11 VIDEO 2(SH9)

M100-12 SRSB (SH11)

M32-1 ATMUX1 (SH10)

M77-1 ATMUX2 (SH10)

SSYNP (SH1)

VIDEO 1S(SH9) M7-9

VIDEO 2S(SH9) M7-2

SRSC (SH11) M100-1

RF2 SH3 M72-12

SSYNP (SH1)

SSYNP (SH1) M67-5

LNFC1 7408 M85

LNFC2 7402 M55

LNFC3 7402 M13

LNFC4 7402 M55

LNFC5 7402 M13

LN16/23 7408 M85

LN23 7408 M70

LN215 7408 M70

LN10/7 7408 M85

LN57 7408 M70

LN247 7408 M70

RCLRS (B) [SH3] M86-10

EVRS (B) [SH3] M86-6

SVRS (B) [SH3] M86-3

RCLRS (A) [SH3] M86-11

EVRS (A) [SH3] M86-5

SVRS (A) [SH3] M86-2

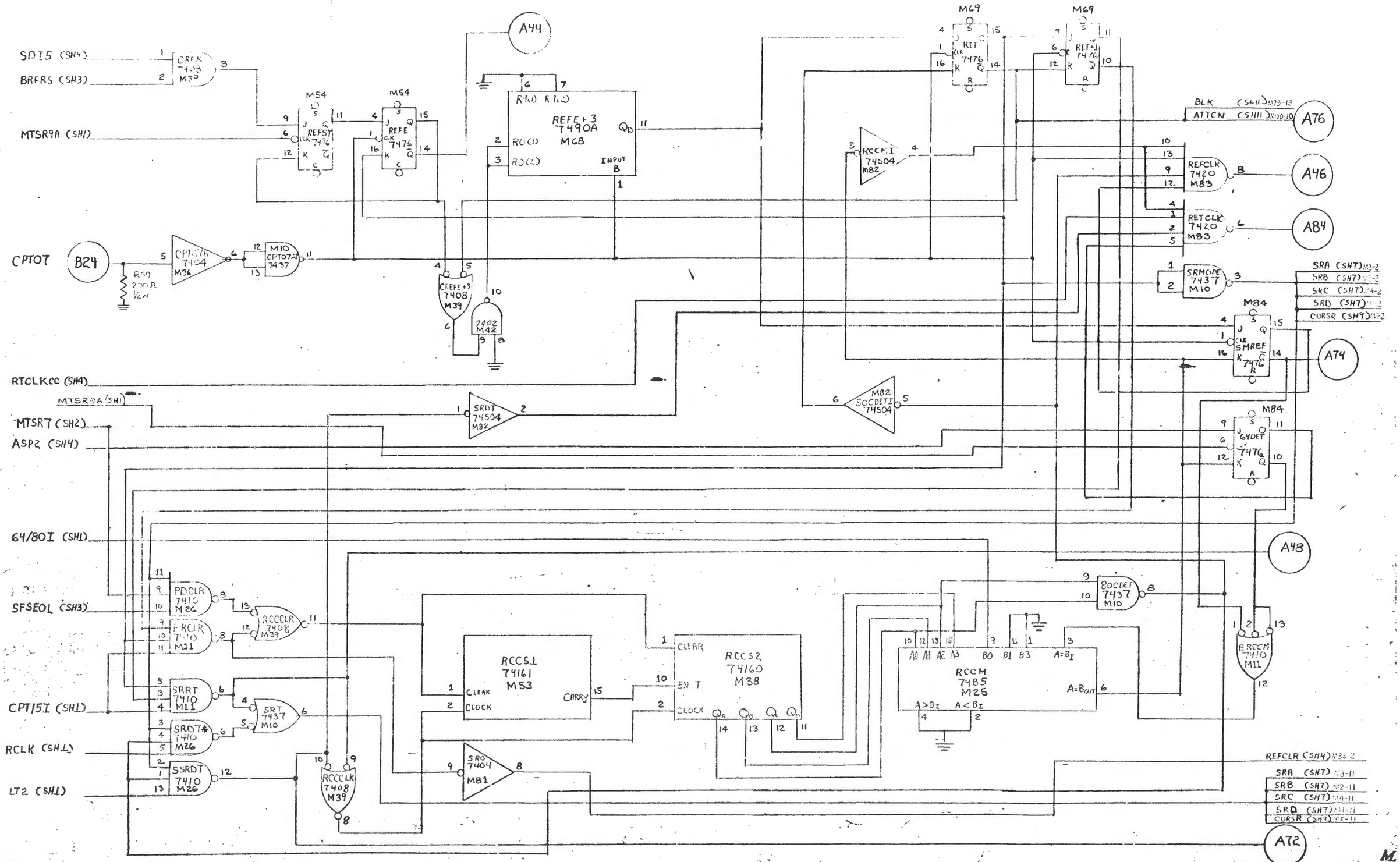
RCLRS (SH3)

SRO (SH5)

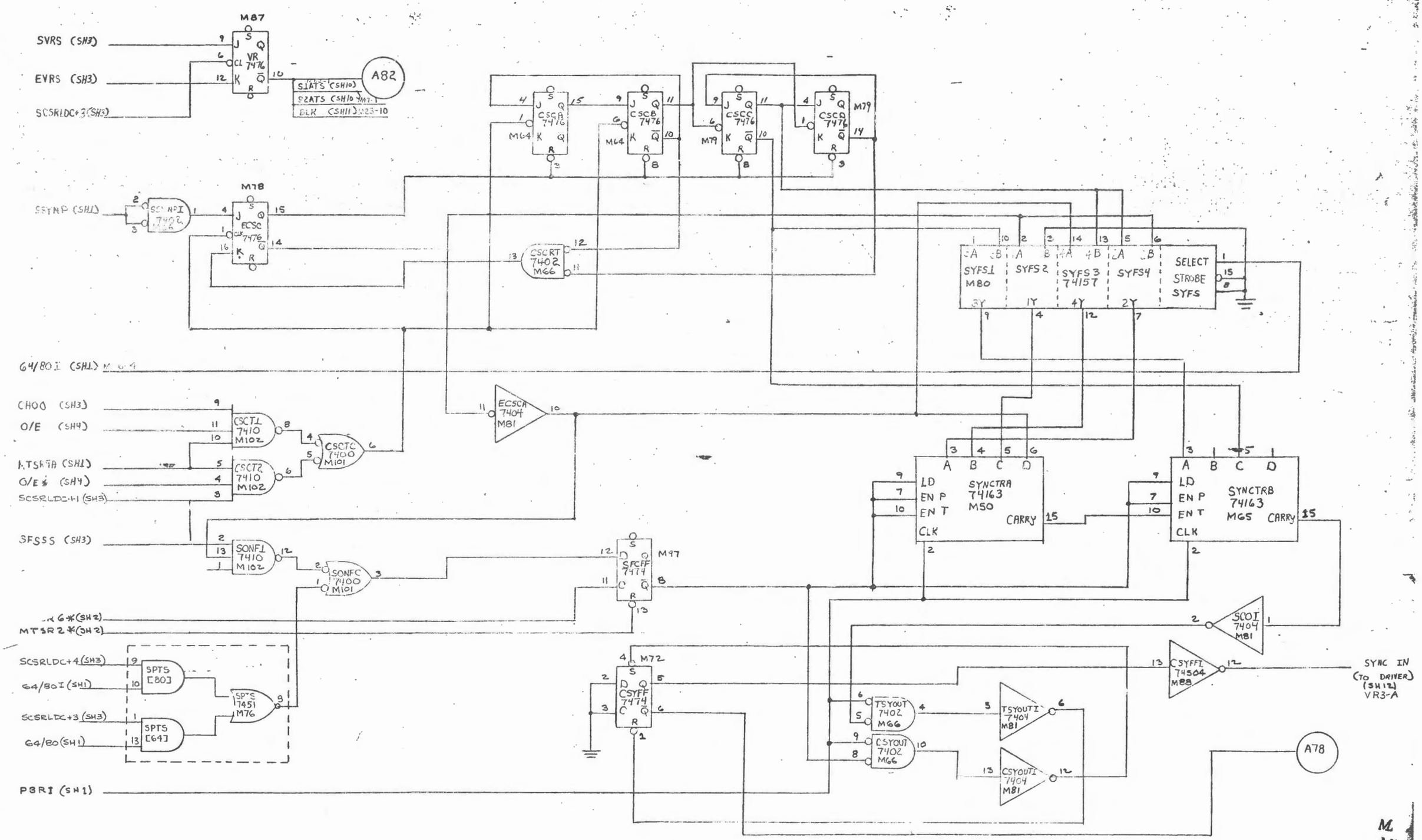
REFCLR 7408 M85

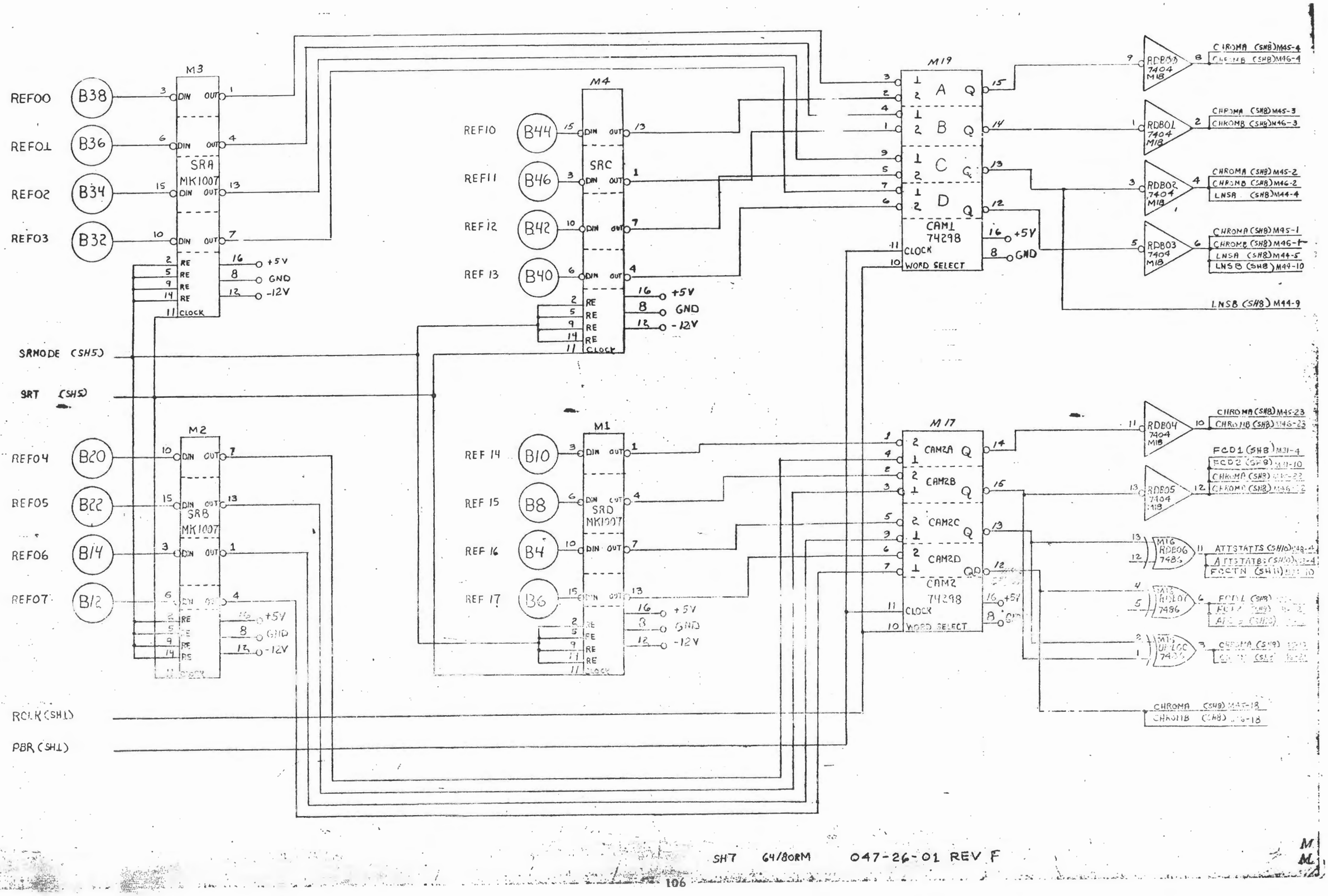
A52

SH4 64/80 RM 047-26-01 REV F



SH5 64/80 RM 047-26-01 REV F


M87
SVRS (SH3)
EVRS (SH3)
SCSRLDC+3(SH3)
VR 7476 M87
SIATS (SH10)
S2ATS (SH10)
DLR (SH11)
A82
M78
SSYNP (SH1)
SCSNPI 7402
ECSC 7476
CSCRT 7402 M66
M64
CSCA 7476
CSCB 7476
M79
CSCC 7476
CSCD 7476
SYFS1 M80
SYFS2
SYFS3 74157
SYFS4
SELECT STROBE SYFS
64/80I (SH1)
CH00 (SH3)
O/E (SH4)
MTSR1A (SH1)
O/E* (SH4)
SCSRLDC+1 (SH3)
CSCTL 7410 M102
CSCTC 7400 M101
CSCTR 7410 M102
ECSCA 7404 M81
SFSSS (SH3)
SONFI 7410 M102
SONFC 7400 M101
SFCFF 7474 M97
MT3R6* (SH2)
MT3R2* (SH2)
SCSRLDC+4 (SH3)
64/80I (SH1)
SCSRLDC+3 (SH3)
64/80 (SH1)
SPTS [80]
SPTS [64]
SPTS 7451 M76
CSYFF 7474 M72
PBRI (SH1)
SYNCTRA 74163 M50
SYNCTRB 74163 M65
LD
ENP
ENT
CLK
CARRY
TSYOUT 7402 M66
CSYOUT 7402 M66
TSYOUTI 7404 M81
CSYOUTI 7404 M81
SCOI 7404 M81
CSYFFI 74S04 M88
SYNC IN (TO DRIVER) (SH12) VR3-A
A78


M3
REF00
B38
REF01
B36
REF02
B34
REF03
B32
SRA
MK1007
DIN
OUT
RE
CLOCK
+5V
GND
-12V
M4
REF10
B44
REF11
B46
REF12
B42
REF13
B40
SRC
M2
REF04
B20
REF05
B22
REF06
B14
REF07
B12
SRB
M1
REF14
B10
REF15
B8
REF16
B4
REF17
B6
SRD
M19
CAM1
74298
A
B
C
D
Q
CLOCK
WORD SELECT
M17
CAM2A
CAM2B
CAM2C
CAM2D
CAM2
RDB03
7404
M18
RDB01
RDB02
RDB05
RDB04
MTG
RDB06
7486
CHROMA (SH8) M45-4
CHROMB (SH8) M46-4
CHROMA (SH8) M45-3
CHROMB (SH8) M46-3
CHROMA (SH8) M45-2
CHROMB (SH8) M46-2
LNSA (SH8) M44-4
CHROMA (SH8) M45-1
CHROMB (SH8) M46-1
LNSA (SH8) M44-5
LNSB (SH8) M44-10
LNSB (SH8) M44-9
CHROMA (SH8) M45-23
CHROMB (SH8) M46-23
FCD1 (SH8) M31-4
FCD2 (SH8) M31-10
CHROMA (SH8) M45-22
CHROMA (SH8) M46-22
ATTSTATTS (SH10) M48-4
ATTSTATTB (SH10) M48-10
FOCTN (SH11) M31-10
CHROMA (SH8) M45-18
CHROMB (SH8) M46-18
SRMODE (SH5)
SRT (SH5)
RCLK (SH1)
PBR (SH1)

RDB00 (SH7)
RDB01 (SH7)
RDB02 (SH7)
RDB03 (SH7)
RDB04 (SH7)
RDB05 (SH7)
SCLNCTRAQC (SH4)
SCLNCTRAQB (SH4)
SCLNCTRAQA (SH4)
O/E (SH4)
CDIR2(D) (SH7)
UP/LOC (SH7)
ROMENB (SH10)

UC
CHROMA
MM6280
M45

+5V
GND

ALL RESISTORS 1.8K, 1/4 W, 5%
RS0 RS2 RS1 RS3 RS4 RS5 RS6 RS7

M60
BIT 1 BIT 2 BIT 3 BIT 4
CLOCK
CLEAR M60
OUT REG 1
74175

M59
BIT 5 BIT 6 BIT 7 BIT 8
CLOCK
CLEAR
OUT REG 2
74175

DSR1
74166
M75
A B C D E F G H
INHIBIT
SH/LD
CLOCK
Q_H
CH/CUR1 (SH9)
SRLD (SH1)
SFSOSC (SH3) M58-9
MTSR4* (SH2) M37-3

LNSA 7408 M44
LNSB 7408 M44
FCS1 7408 M44
FCS2 7408 M44
CAM1 (SH7)

LC
CHROMB
MM6280
M46

RDB0T (SH7)
FCCTN (SH11)
BS2
FCD1 7420 M31
FCD2 7420 M31

ATTSTATA5 (SH10) M48-7
ATTSTATB3 (SH10) M63-7
ATTSTATA5 (SH10) M48-9
ATTSTATB5 (SH10) M63-9
FCCTN (SH11) M74-1 & 13

DSR2
74166
M61
CH/CUR2 (SH9) M34-13

COMP1 A8

COMP2 A6

CURSR MK1007 M5

CUR1

CUR2

DIN OUT

SRMODE (SH5)

SRT (SH5)

RE

CLOCK

+5V

GND

-12V

M20

S1CG

S2CG

CURGEN 74175

CLEAR

CLOCK

PHREG 74175 M49

S1CI

S2CI

S1HTF

PHRB

S1HID (SH10) M6-3

S2HID (SH10) M6-5

S1HID (SH10) M6-2

BLK (SH11) M23-12

VPSI (SH11)

MTSR4* (SH2)

HIS (SH10)

HR (SH11)

MTSR8* (SH2)

CTI (SH11)

DSR1 (SH8)

DSR2 (SH8)

BLKI (SH11)

LOAI (SH4)

LOA (SH4)

CH

CUR

CH/CUR

CH/CUR2

CH/CUR1

7451 M34

S1DC 7400 M21

S2DC 7400 M21

VIDEO1S 74128 M7

VIDEO1 74128 M7

VIDEO2S 74128 M7

VIDEO2 74128 M7

TO DRIVERS

VIDEO 1S CR14-C

VIDEO 1 CR16-C

VIDEO 2S CR8-C

VIDEO 2 CR6-C

SH 12

SRSC (SH11)

ATINH* (SH11)

RBLO7 (SH7)

SCSRLDC45 (SH3)

RCLK* (SH11)

RCLK (SH11)

LOA (SH4)

VPSI (SH11)

LNSB (SH8)

LNSA (SH8)

RBDO6 (SH7)

M7SR3* (SH2)

M7SR8* (SH2)

S2CI (SH9)

S1HTE (SH9)

S1CI (SH9)

SRSB (SH11)

VR* (SH6)

7451
M74
AFCG
ROMFRE
M76
SN7451

SIATS
74174
M62

S2ATS
74174
M47

TBLI
IBLN
THI
BBLI
BBLN
BHI
CLOCK
CLEAR

ATMUX2
74157
SELECT
STROBE
M32

M77

AFTSCLK
7402
M6

AFESCLK
7402
M6

M48

M63

BLIS
BLNS
HIS

ATTSTATTS
74298
WORD SELECT
CLOCK

ATTSTATBS
74298
WORD SELECT
CLOCK

TSBLI/N
BSBLI/N
BLI/N
7451
M93

S1HTF(SH9) M49-4

S1HID
7402
M6

S2HID
7402
M6

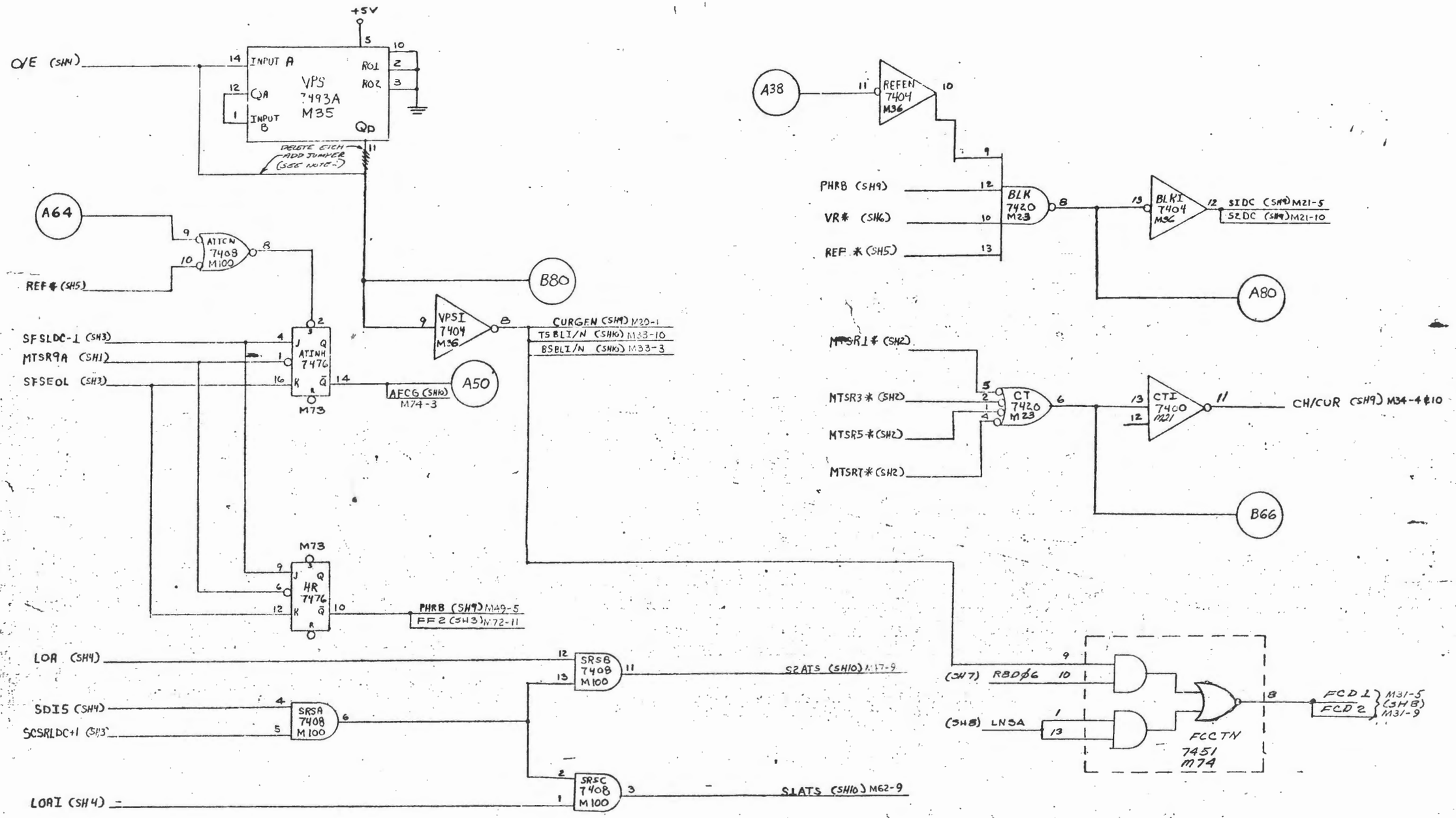
TO DRIVERS (SH12)

HI INTENSITY 1,15
VR2-A

HI INTENSITY 2,25
VR1-A

CHROMA (SH8) M45-20&21

CHROMB (SH8) M46-20


+5V
O/E (SH4)
INPUT A
QA
INPUT B
VPS 7493A M35
RO1
RO2
QD
DELETE EACH ADD JUMPER (SEE NOTE)
A64
ATTCN 7408 M100
REF* (SH5)
B80
VPSI 7404 M36
CURGEN (SH4) M20-1
TSBLI/N (SH10) M33-10
BSBLI/N (SH10) M33-3
SFSLDC-1 (SH3)
MTSR9A (SH1)
SFSEOL (SH3)
ATINH 7476
M73
AFCG (SH10) M74-3
A50
M73
HR 7476
PHRB (SH9) M49-5
FF2 (SH3) M72-11
LOA (SH4)
SDI5 (SH4)
SCSRLDC+1 (SH3)
LOAI (SH4)
SRSB 7408 M100
SRSA 7408 M100
SRSC 7408 M100
S2ATS (SH10) M17-9
S1ATS (SH10) M62-9
A38
REFEN 7404 M36
PHRB (SH9)
VR* (SH6)
REF* (SH5)
BLK 7420 M23
BLKI 7404 M36
S1DC (SH9) M21-5
S2DC (SH9) M21-10
A80
MTSR1* (SH2)
MTSR3* (SH2)
MTSR5* (SH2)
MTSR7* (SH2)
CT 7420 M23
CTI 7400 M21
CH/CUR (SH9) M34-4 & 10
B66
(SH7) RBDØ6
(SH8) LN3A
FCCTN 7451 M74
FCD 1
FCD 2
M31-5 (SH8) M31-9

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+5V
R1 270Ω ±5% ¼W
CR1 IN4148
CR2 IN4148
CR3 IN4148
(SH10) S2HID INPUT
R2 4.7K
IN957B 6.8V VR1
+5V
R3 470Ω
+12V
CR4 IN4148
R9 3.9K
2N3906 Q1
R5 100Ω, 2% ¼W
R6 120Ω, 2% ¼W
R7 100Ω, 2% ¼W
CR5 IN4148
M7-13 (SH9) VIDEO2
2N3906 Q2
Q3 2N3904
R9 4.7K 2%
R10 75Ω 2%
CR6 IN4148
B16 OUTPUT 2
B18
R11 390Ω 2%
-13V
R12 ¼W 100Ω
C1 100PF
-13V

+12V
R14 100Ω, 2% ¼W
CR7 IN4148
2N3906 Q4
R13 3.9K
R15 120Ω, 2% ¼W
R17
CR8 IN4148
R16 100Ω, 2% ¼W
M7-1 (SH9) VIDEO2S
2N3906 Q5
Q6 2N3904
R18 4.7K 2%
R19 75Ω 2%
CR9 IN4148
B48 OUTPUT 2S
B50
C5 1000PF
R20 390Ω 2%
-13V
R21 100Ω ¼W
C2 100PF
-13V

+12V
A41 A42
IN3611 CR17
-13V A69 A70
GND A85 A86 B85 B86
+5V A1 A2 B1 B2
C6 .1μf 100V
C7 .1μf 100V
C8 .1μf 100V
C9 .1μf 100V
C10 5μf 25V
C11 5μf 25V
C12 5μf 25V
C13 5μf 25V
C14 5μf 25V
C15 5μf 25V
C16 5μf 25V
C17 THRU C43 .1μf, 100V QTY 25
+12V
-13V
+5V

+5V
R22 4.7K
IN957B 6.8V VR2
+12V
R23 470Ω
(SH10) S1HID INPUT
+12V
R42 2K ±5% ¼W
VR3 3.3V IN746A
CR16 IN4148
CSYFFI SH6 INPUT
R43 2K ±5% ¼W
+5V
Q13 2N4403
R44 ±5% 220Ω 1W
IN4735A 6.2V VR4
R45 390Ω ¼W
-13V
+12V
R25 100Ω, 2% ¼W
CR10 IN4148
2N3906 Q7
R24 3.9K
R28
R26 120Ω, 2% ¼W
R27 100Ω, 2% ¼W
CR11 IN4148
M7-4 VIDEO1 (SH9)
2N3906 Q8
Q9 2N3904
R29 4.7K 2%
R30 75Ω 2%
CR12 IN4148
A16 OUTPUT 1
A14
R31 390Ω 2%
R32 100Ω ¼W
C3 100PF
-13V
-13V

+12V
R34 100Ω, 2% ¼W
CR13 IN4148
2N3906 Q10
R33 3.9K
R37
R35 120Ω, 2% ¼W
CR14 IN4148
R36 100Ω, 2% ¼W
M7-10 (SH9) VIDEO1S
Q11 2N3906
Q12 2N3904
R38 4.7K 2%
R39 75Ω 2%
CR15 IN4148
A54 OUTPUT 1S
A58
R40 390Ω 2%
R41 100Ω ¼W
C4 100PF
-13V
-13V

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and the no right is granted to disclose or use any information obtained in said document. This restriction does not limit the right to use information obtained from any other source

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
3 PLACE DECIMAL ± .005
2 PLACE DECIMAL ± .03
FRACTIONAL ± 1/32
12-24 ANGULAR ± 30'

DRAWN	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

TITLE

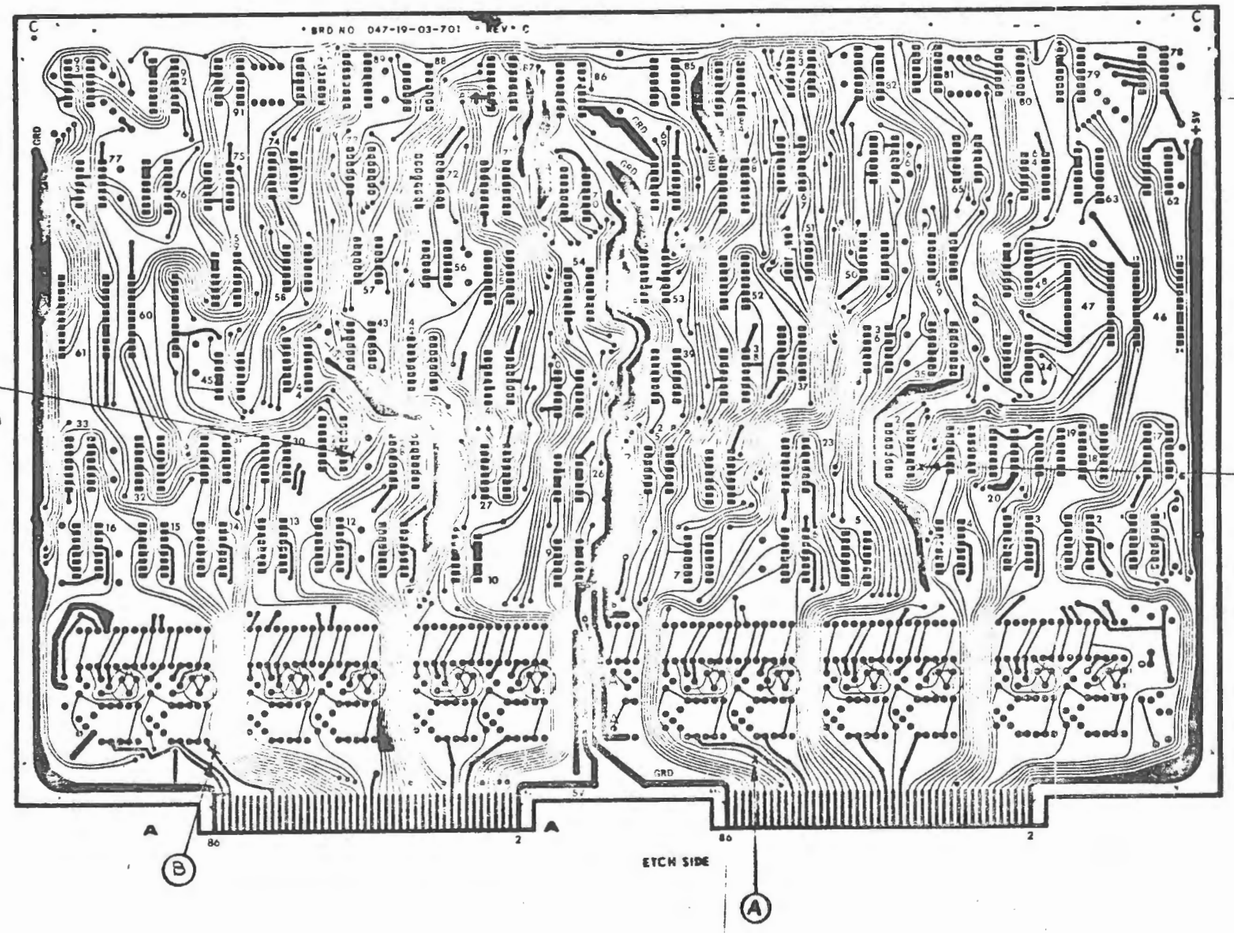
SIZE	DOCUMENT NUMBER	REV
D	047-26-01	F

SCALE SHT 12 12

CUT ETCH	
A	I10 PIN 70 TO EYELET
B	I0 FIN A70 TO EYELET
C	AT M29-15
D	M22-14 TO M47-21

-716 ONLY

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD



ETCH SIDE

DESIGNATION	SIZE AFTER PLATING EXCEPT WHERE NOTED	QUANTITY
ALL OTHERS	.040 ± .003 DIA.	
N	.187 +.003 −.000 DIA. DO NOT PLATE THRU	
M	.156 +.003 −.000 DIA. DO NOT PLATE THRU	
G		
F		
E		
D		
C		
B	.062 ± .003 DIA.	
A	.052 ± .003 DIA.	

ASSEMBLE WITH ARTWORK 047-19-02-701 REV C

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
9 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
1 PLACE (WHOLE) ± .063
2 PLACES ± .03
3 PLACES ± .010
4 PLACES ± .005
5 PLACES ± .002
12-24 MICRO INCH ± 3
ANGLES ± 1°

	DATE
DRAWN	
CHECKED	
ENGINEER	
APPROVED	
FIRST USED ON	

TITLE P.C. BOARD ASSY CLUSTER REFRESH SLAVE 701-716C

SIZE	DOCUMENT NUMBER	REV
D	047-19-02	C5

SCALE 1/1 SHT 2 OF 4

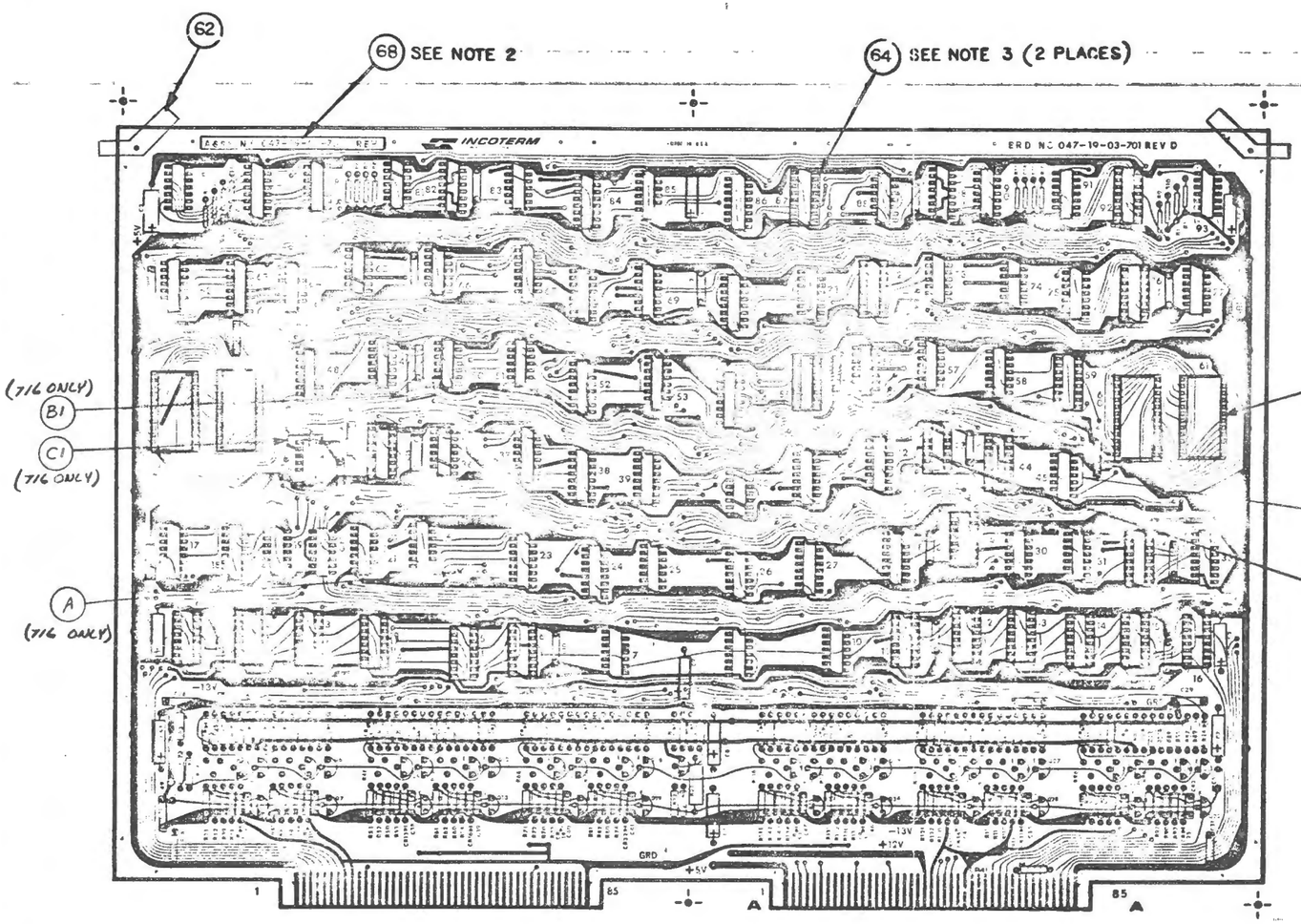
ITEM NO.	REFERENCE DESIGNATION
73	M46(714,715),M61(715)
72	M47(-712-713)M60(-713)
71	M46(712-713)M61(-713)
65	M46 47,60,61(SOCKET)
64	SEE NOTE 3
63	M43 (SOCKET)
62	
61	Q4 7 10,13,16,19,22,25,28 33 34 37
60	Q2,3 5,6 8,9,11,12,14,15 17,18,20,21,23,24,26,27,29, 30,32,33,35,36
59	Q1
56	
57	
56	C49,50
55	C10-35,48
54	C7,8,9,51
53	C1-6
52	C36-47
51	
50	
49	CR41
48	VR1
47	VR2
46	VR3-8
45	CR1-40
44	R27,29,37,39,47,49,57,59, 67,69,77,79,87,89,97,99, 107,109,117,119,127,129,137,139
43	R31,41,51,61,71,81,91,101, 111,121,131,141
42	R23,43,63,83,103,123
41	R25,35,45,55,75,85,95,105 115,125,135,145
40	R24,44,64,84,104,124
39	R19,20
38	R28,3[illegible] 48,58,[illegible],8,89,98, 108,118,128,138
37	R33,34,53,54,73,74,93,94 113,114,133,134
36	R30,40,50,60,70,80,90, 100,110,120,130,140
35	R32,42,52,62,72,82,92,102 112,122,132,142
34	R18
33	R22
32	R21
31	R1-16
30	M46(-705,09)M61(-709)
29	M47(-704,08)M60(-708)
28	M46(703,07)M61(-707)
27	M46(-702,04,06,08) M61(-706,08)
26	M1-6,35
25	M18,22,52,67,84
24	M48,63,79
23	M70,82,89
22	M24,27,38,39,41,53,69
21	M17,23,28,33
20	M37,42,68,71,86
19	M36,40
18	M62,64,75,77,78,80,91,93
17	M20
16	M54
15	M49,51,56,58,81,85,90
14	M10,7
13	
12	M34,45,66,73
11	M9
10	M19,21,30,31
9	M25,83,88
8	M26,50,57,65,74
7	
6	
5	
4	
3	
2	
1	

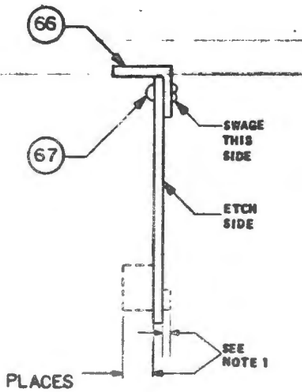
CUT ETCH FROM	
A	M22-14 TO EYELET 716 ONLY

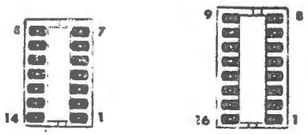
ADD JUMPER ITEM 74 FROM	
A1	M45-2 TO M45-1
B1	M49-7 TO M50-13
C1	M34-7 TO M34-9

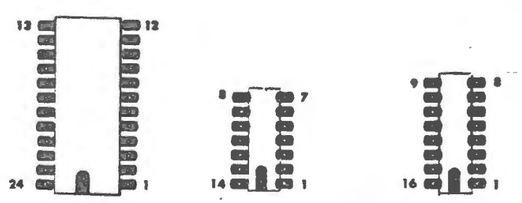
716 ONLY

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD









PIN NUMBERING AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 68 AND MARK ASSY NO. 047-19-02-70 AND LATEST ASSY REVISION.
3. LOCATE ITEM 64 IN FOLLOWING POSITIONS;
   M1-M6, M11-16, M29, M32, M35, M44, M55, M59, M72, M76, M87, & M92.

ITEM	REFERENCE DESIGNATION
4	M11-16,44
3	M29,32,55,72,87
2	M59,76,92
1	M43

706-709

047-19-10-701 EXPANSION KIT

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-19-03-701 REV D

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION — 5 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

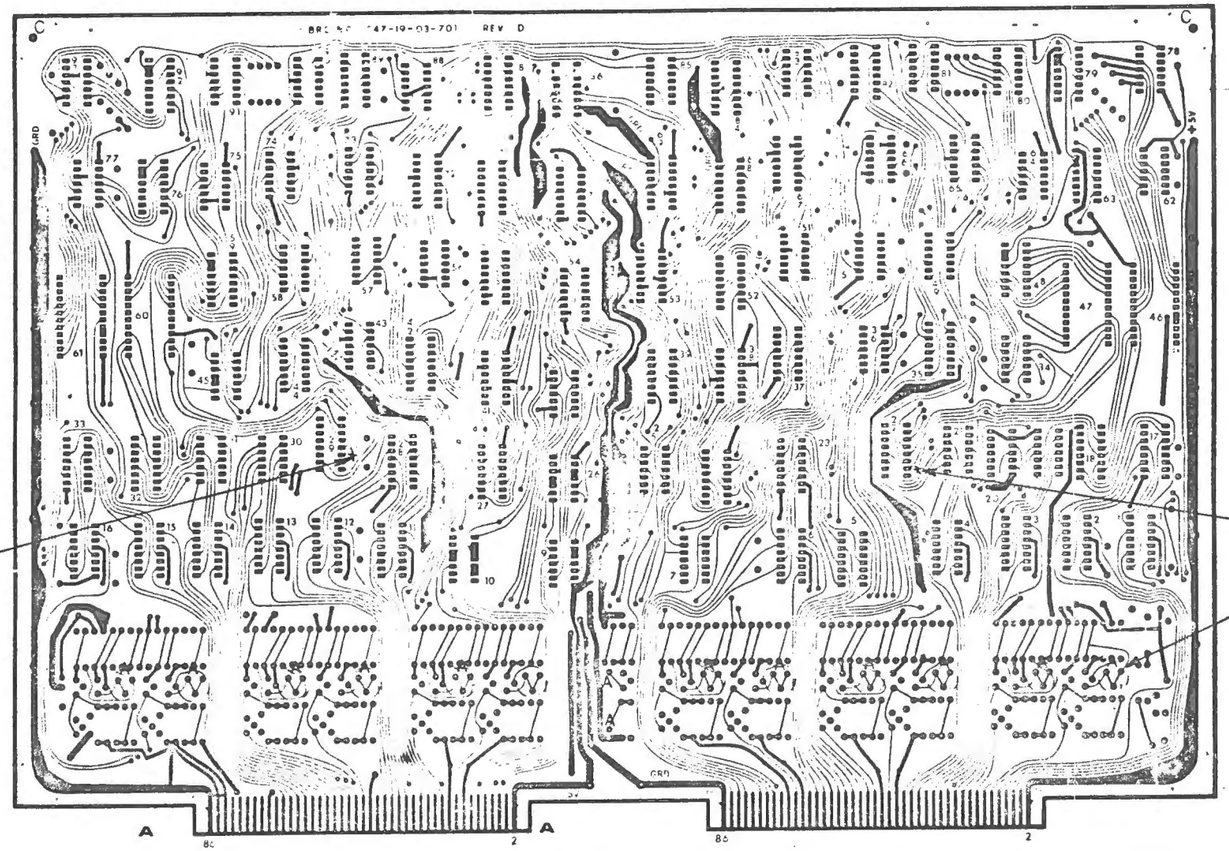
DRAWN	A. Dr. Hankin	6-11-79
CHECKED	Carl Everett	6/12/79
APPROVED	R. Bowen	6/13/79

P.C. BOARD ASSY REFRESH SLAVE CLUSTER 701D-716D

SIZE D | DOCUMENT NUMBER 047-19-02 | REV G5

SCALE 1:1 | SHT 3 OF 4

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APP



(716 ONLY) (B)

(A) (716 ONLY)

DETAIL A

DETAIL A
SCALE 2/1
TYP 12 PLACES

ETCH SIDE

B	AT M29-15
A	M22-14 TO M47-21
CUT ETCH FROM	

} 716 ONLY

ASSEMBLE WITH ARTWORK 047-19-03-701 REV D

PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
[illegible] BALTIMORE ROAD
[illegible] MASSACHUSETTS 01760

P.C. BRD. ASSY
CLUSTER REFRESH
SLAVE
701-716

[illegible]	6-11-74		DOCUMENT NUMBER	REV
C. Lydick	6/27/74	D	047-19-02	G5
R Bryden	6/27/74			
NEXT ASSY USED ON		SIZE	SHT 4 OF 4	

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

A	RELEASED / RD# 737X		
B	REVISED/ECO 3203	RS	
C	REV/ECO 32536-14-N		
D	REVISED/ECO 3281		
E	REVISED/ECO 3622		

SRCLK (SH17)

M1 — MK1007 — IRA

REF20 B13 — RE 2, DIN 3, CK 11
REF21 B4 — RE 5, DIN 6
REF22 B9 — RE 9, DIN 10
REF23 B11 — DIN 15, RE 14
-13V 12, +5V 16, GND 8

CAMA0A (SH2) M17-11 — 1
CAMA1A (SH2) M17-5 — 4
CAMA2A (SH2) M17-2 — 7
CAMA3A (SH2) M17-14 — 13

M2 — MK1007 — IRC

REF30 B6 — RE 9, DIN 12, CK 11
REF31 B12 — RE 5, DIN 6
REF32 B10 — RE 2, DIN 3
REF33 B8 — DIN 15, RE 14
-13V 12, +5V 16, GND 8

CAMA0B (SH2) M17-10 — 7
CAMA1B (SH2) M17-6 — 4
CAMA2B (SH2) M17-3 — 1
CAMA3B (SH2) M17-15 — 13

RECIRA (SH17)

SRCLK (SH17)

M6 — MK1007 — IRB

REF24 B72 — RE 2, DIN 3, CK 11
REF25 B74 — RE 5, DIN 6
REF26 B60 — RE 9, DIN 10
REF27 B62 — DIN 15, RE 14
-13V 12, +5V 16, GND 8

CAMB4A (SH2) M23-11 — 1
CAMB5A (SH2) M23-2 — 4
CAMB6A (SH2) M23-5 — 7
CAMB7A (SH2) M23-14 — 13

M5 — MK1007 — IRD

REF34 B56 — RE 5, DIN 6, CK 11
REF35 B52 — RE 9, DIN 10
REF36 B54 — RE 14, DIN 15
REF37 B58 — DIN 3, RE 2
-13V 12, +5V 16, GND 8

CAMB4B (SH2) M23-10 — 4
CAMB5B (SH2) M23-3 — 7
CAMB6B (SH2) M23-6 — 13
CAMB7D (SH2) M23-13 — 1

+5V: A1, A2, B1, B2
GND: A85, A36, B85, B86
+12V: A41, A42
-13V: A69, A70

CR41 IN3611

C1 5UF, C2 .1UF, C3 5UF, C4 5UF, C5 5UF, C6 5UF, C7 5UF, C8 5UF, C9 5UF, C10 .1UF, C11 .1UF, C12 .1UF, C13 .1UF, C14 .1UF, C15 .1UF, C16 .1UF, C17 .1UF, C18 .1UF, C19 .1UF, C20 .1UF, C21 .1UF, C22 .1UF, C23 .1UF, C24 .1UF, C25 .1UF, C26 .1UF, C27 .1UF, C28 .1UF, C29 .1UF, C30 .1UF, C31 .1UF, C32 .1UF, C33 .1UF, C34 .1UF, C35 .1UF, C48 .1UF, C51 5UF — 25V, 12V

LAST REF DES
R142 (R17 & R1-RB NOT USED)
C51
M93 (M8 NOT USED)
CR41
VR8
Q37

NOTES:
1. TO DISABLE ATTRIBUTES DELETE ETCH AND ADD JUMPERS PER SHEETS 3 & 9

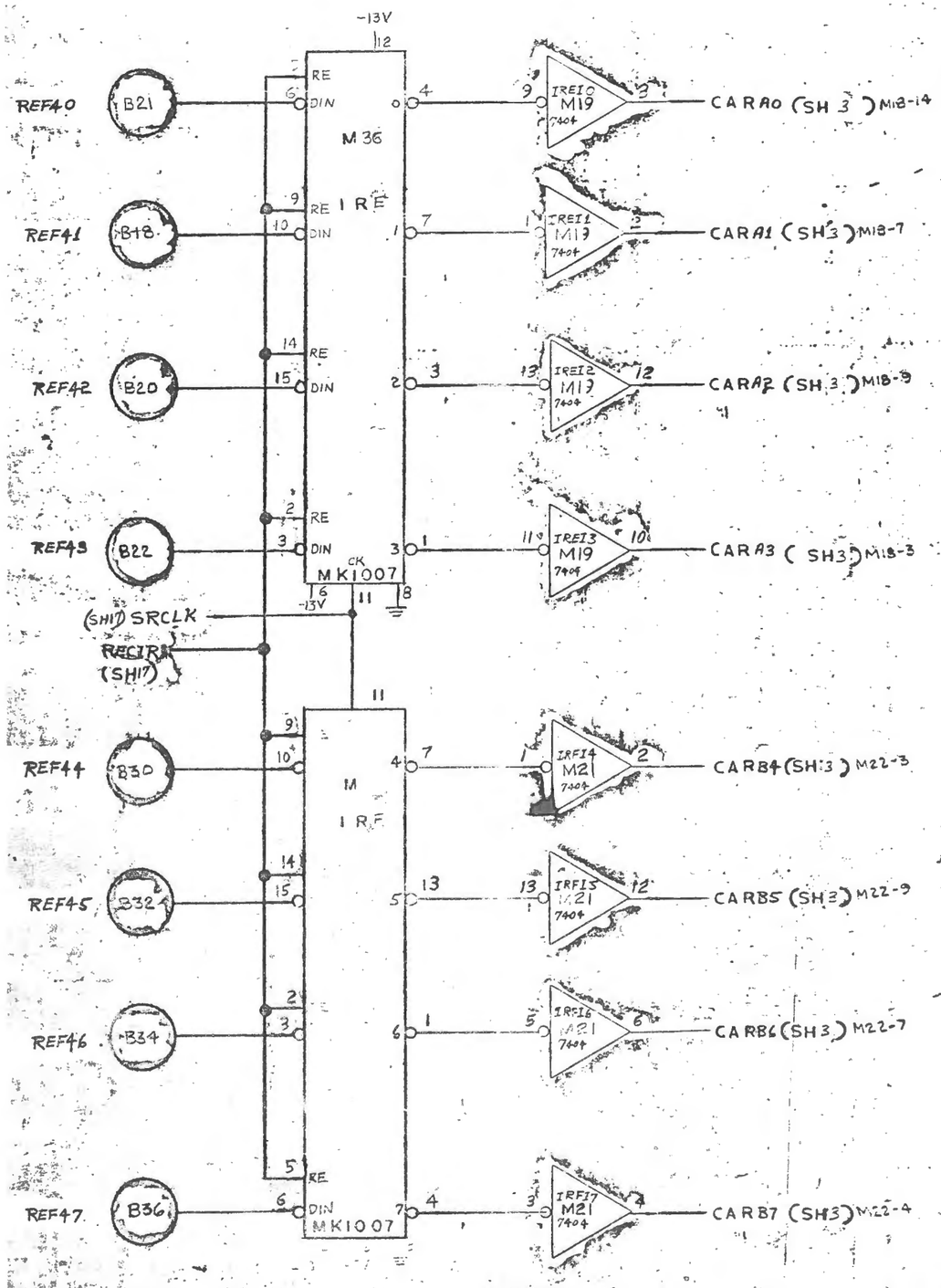
ITEM	PART ASSY NO	DESCRIPTION

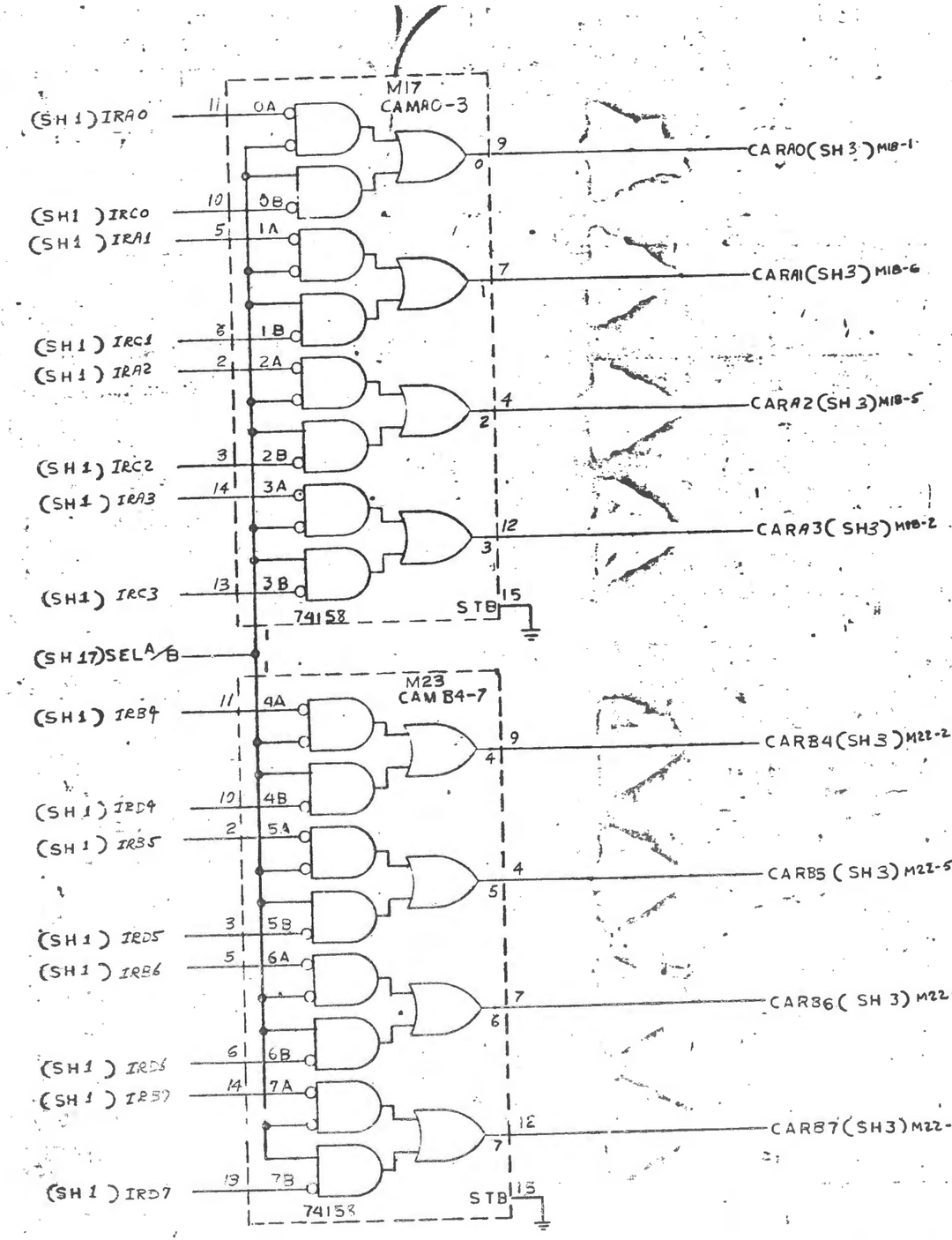
INCOTERM CORPORATION

CLUSTER REFRESH
SLAVE
LOGIC DIAGRAM -001

D 047-19-01 E

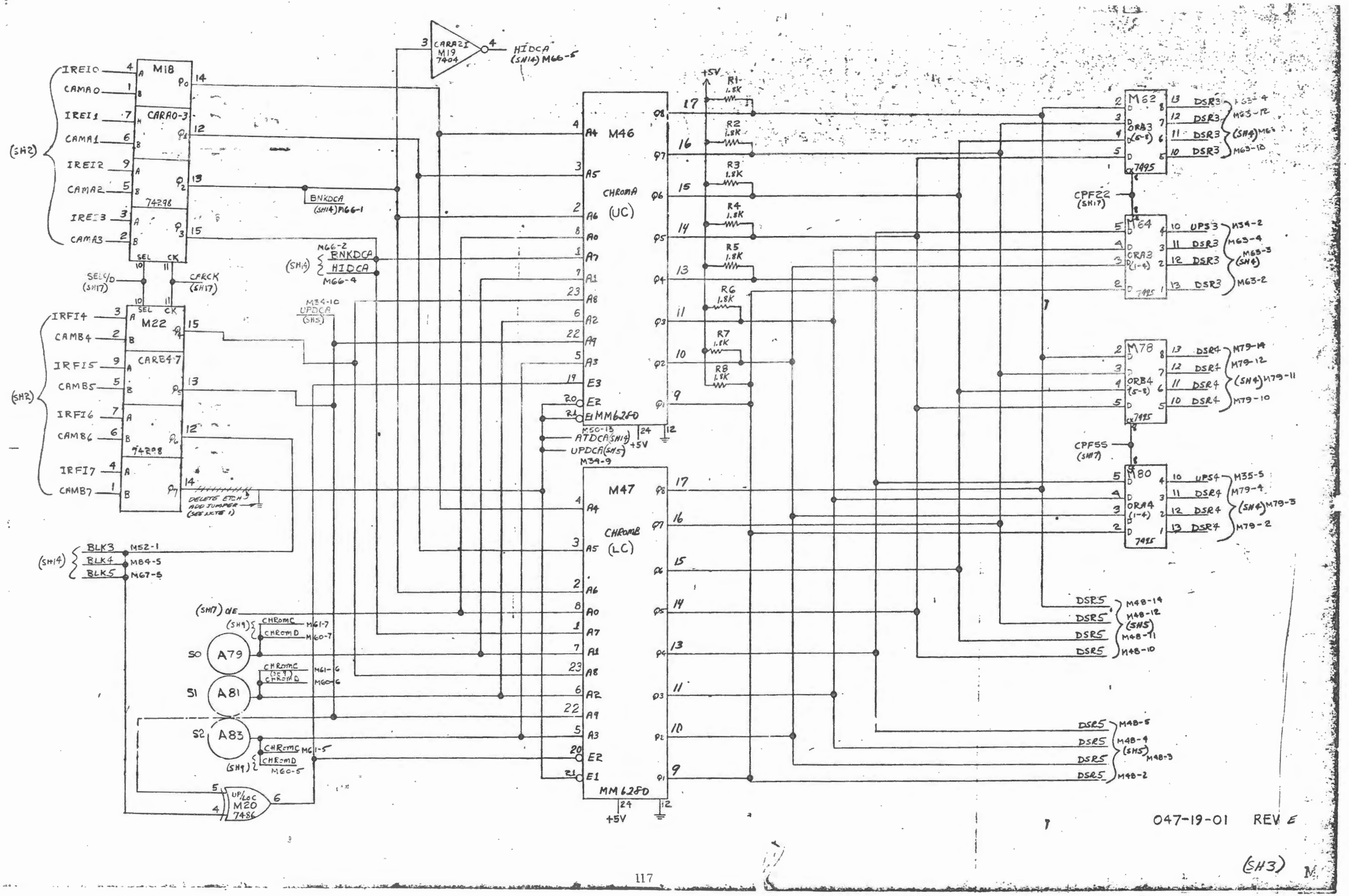
1 OF 19



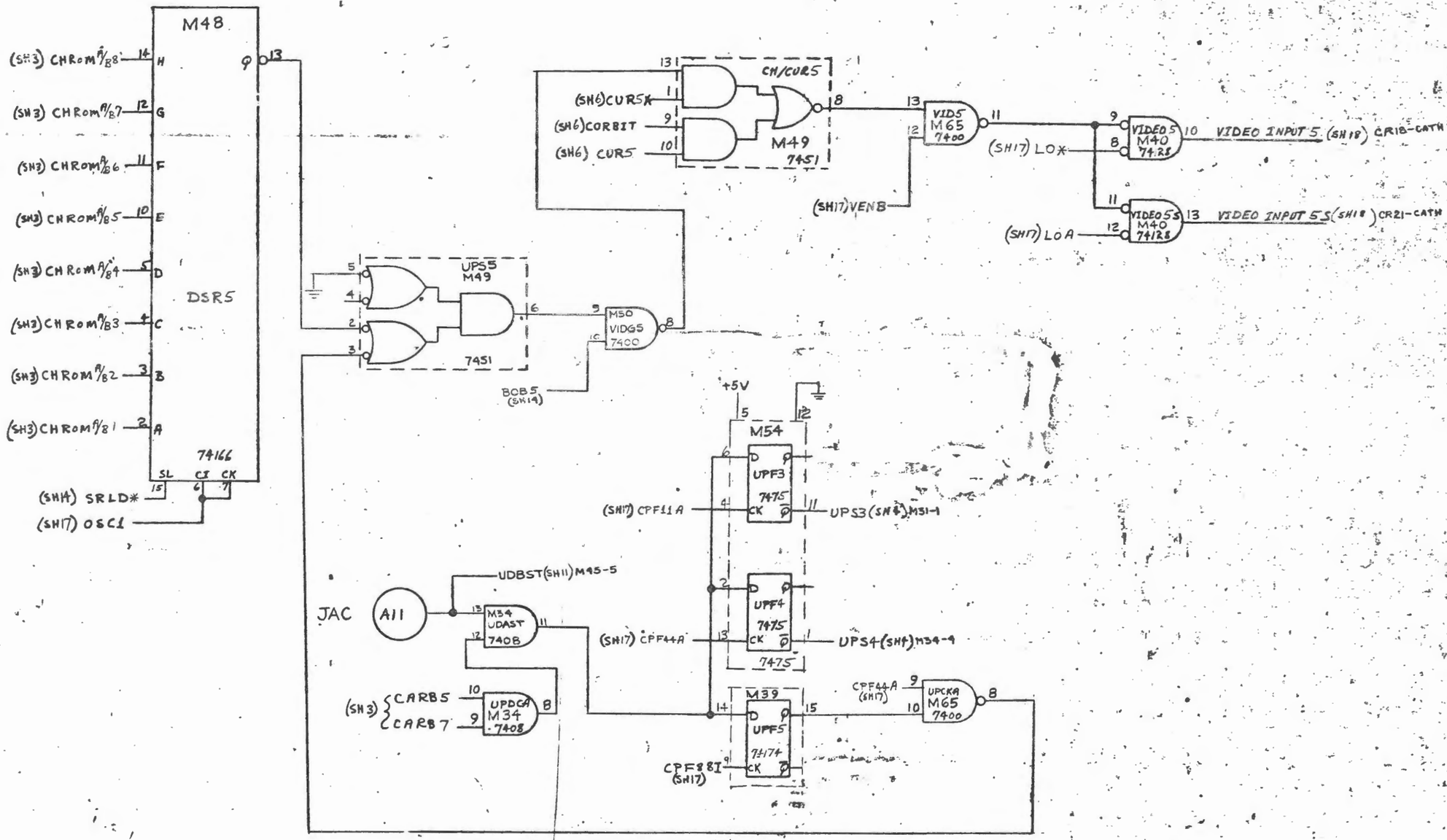


047-19-01 REV E

SH 2


M18
CARA0-3
74298
IREI0
CAMA0
IREI1
CAMA1
IREI2
CAMA2
IREI3
CAMA3
(SH2)
SEL
CK
SELC/D (SH17)
CARCK (SH17)
M22
CARB4-7
IRFI4
CAMB4
IRFI5
CAMB5
IRFI6
CAMB6
IRFI7
CAMB7
DELETE ETCH
ADD JUMPER
(SEE NOTE 1)
CARA2I M19 7404
HIDCA (SH14) M66-5
BNKDCA (SH14) M66-1
M66-2 BNKDCA
(SH4) HIDCA
M66-4
M34-10 UPDCA (SH5)
M46
CHROMA (UC)
MM6280
M50-13 ATDCA (SH14)
UPDCA (SH5)
M39-9
+5V
R1 1.8K
R2 1.8K
R3 1.8K
R4 1.8K
R5 1.8K
R6 1.8K
R7 1.5K
R8 1.5K
M47
CHROMB (LC)
BLK3 M52-1
BLK4 M84-5
BLK5 M67-5
(SH14)
(SH7) OE
CHROMC M61-7
CHROMD M60-7
S0 A79
CHROMC M61-6
CHROMD M60-6
S1 A81
S2 A83
CHROMC M61-5
CHROMD M60-5
(SH9)
UP/LOC M20 7486
M62
ORB3 (5-8)
7495
DSR3
M63-14
M63-12
(SH4) M63
M63-10
CPF22 (SH17)
M64
ORA3 (1-4)
UPS3
M34-2
M63-4
M63-3
M63-2
M78
ORB4 (5-8)
DSR4
M79-14
M79-12
(SH4) M79-11
M79-10
CPF55 (SH17)
M80
ORA4 (1-4)
UPS4
M35-5
M79-4
M79-3
M79-2
DSR5
M48-14
M48-12
(SH5)
M48-11
M48-10
M48-5
M48-4
M48-3
M48-2
047-19-01 REV E
(SH3)

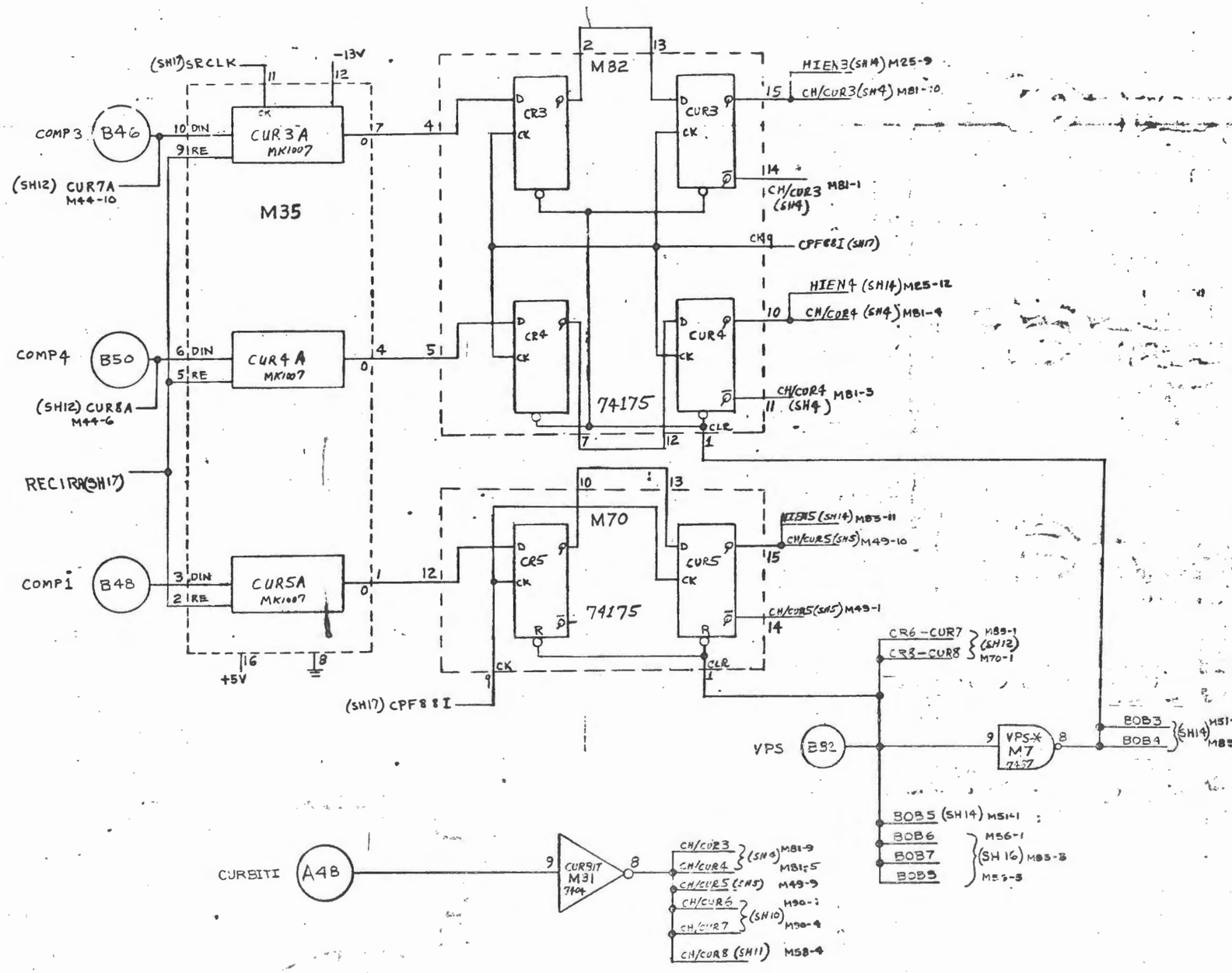
(SH17) OSCI
(SH4) SRLD3
M63
SL CKH CK
ORB36 H
ORB37 G
(SH3) ORB36 F
ORB35 E
(SH3) ORA34 UPS3 M34 7408 (SH5) UPF3
DSR3
ORA33 C
(SH3) ORA32 B
ORA31 A
74166
Q_H
M81
(SH6) CUR3X
(SH6) CUR3BIT
(SH6) CUR3
7451
CHKUR3 7451
VID3 M65 7400
(SH17) VENB
(SH17) LOX
VIDEO3 M36 7412B
VIDEO INPUT 3 (SH18) CR6-CATH
VIDEO3S M36 7412B
VIDEO INPUT 3S (SH18) CR6-CATH
LOA (SH17)
M79
ORB48 H
ORB47 G
(SH3) ORB46 F
ORB45 E
(SH3) ORA44 UPS4 M34 7408 (SH5) UPF4
DSR4
ORA43 C
(SH3) ORA42 B
ORA41 A
74166
(SH4) SRLD4
(SH17) OSCI
M81
(SH6) CUR4X
(SH6) CUR4BIT
(SH6) CUR4
M51 7451
CHKUR4 7451
VID4 M65 7400
VIDEO4 M36 7412B
VIDEO INPUT 4 (SH18) CR12-CATH
VIDEO4S M36 7412B
VIDEO INPUT 4S (SH18) CR15-CATH
LOA (SH17)
047-19-01 REV 41
118
SH 4 M



047-19-01 REV E

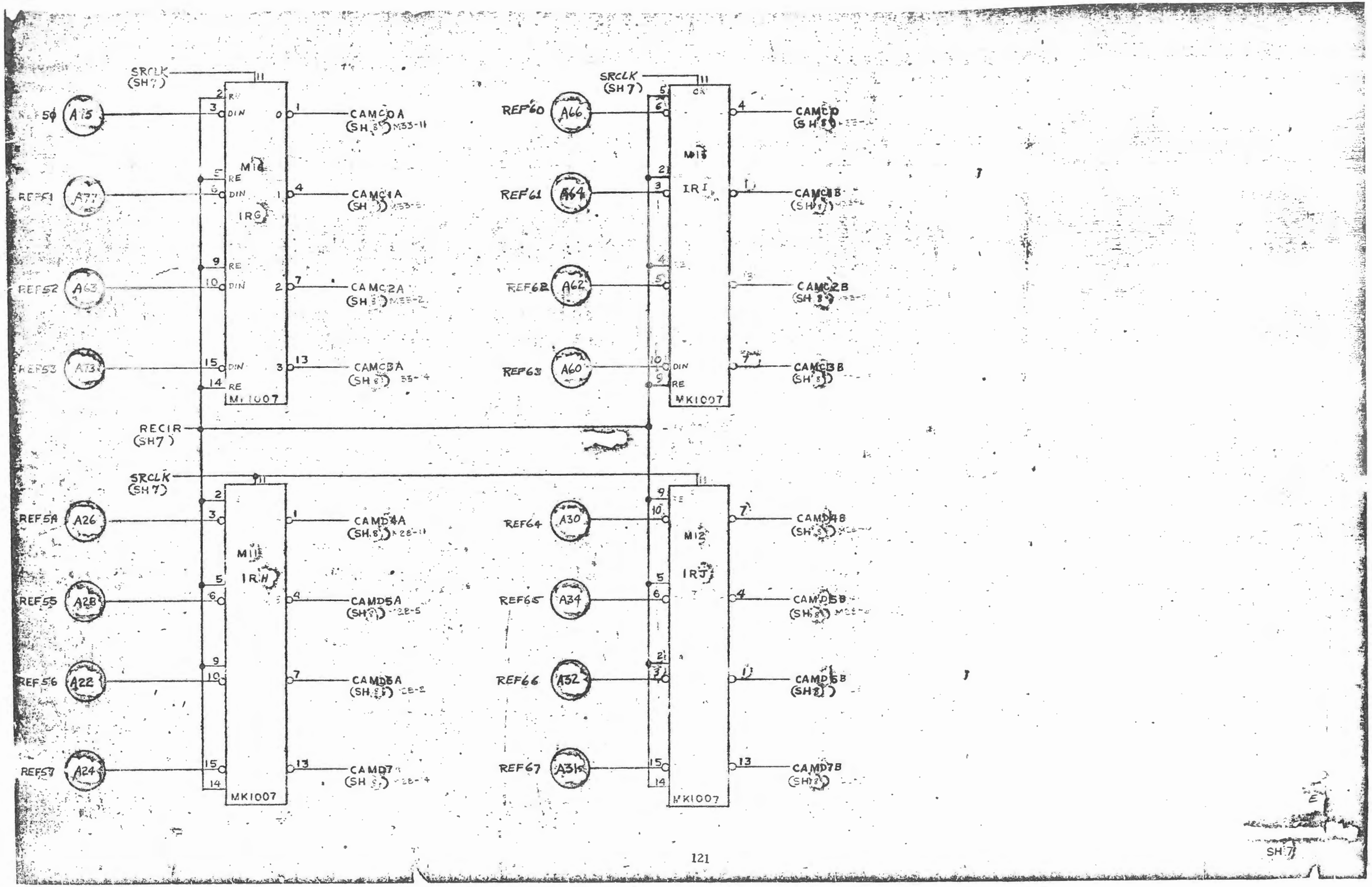
M

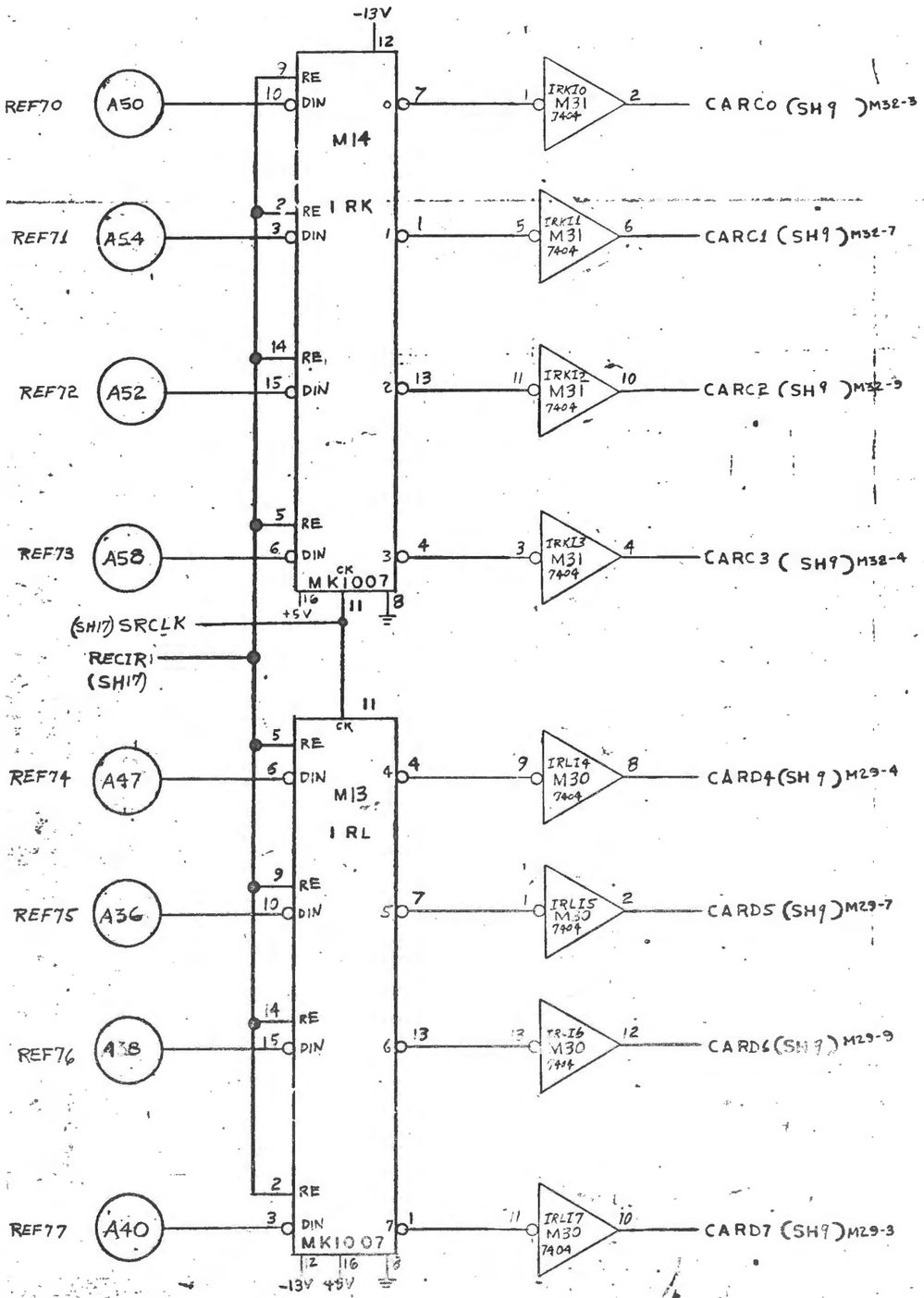
SH 5

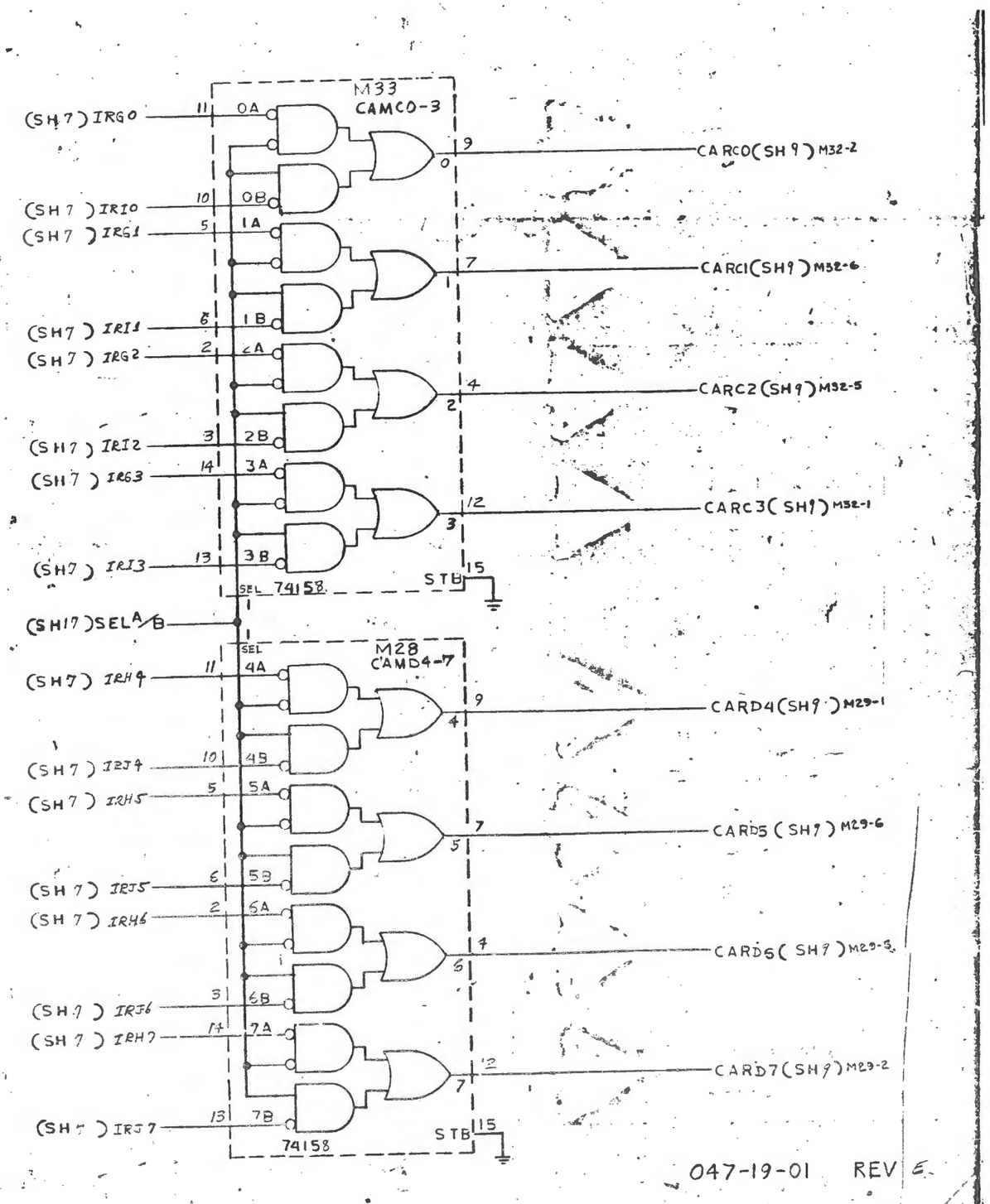


047-19-01 REV E

SH6 M


SRCLK (SH7)
REF50 A15
REF51 A27
REF52 A63
REF53 A13
M16
IRG
MK1007
CAMC0A (SH8) M33-11
CAMC1A (SH8) M33-8
CAMC2A (SH8) M33-2
CAMC3A (SH8) 33-4
RECIR (SH7)
REF60 A66
REF61 A64
REF62 A62
REF63 A60
M15
IRI
CAMC0B (SH8)
CAMC1B (SH8)
CAMC2B (SH8)
CAMC3B (SH8)
REF54 A26
REF55 A28
REF56 A22
REF57 A24
M11
IRH
CAMD4A (SH8) M28-11
CAMD5A (SH8) M28-5
CAMD6A (SH8) M28-2
CAMD7A (SH8) M28-14
REF64 A30
REF65 A34
REF66 A32
REF67 A31
M12
IRJ
CAMD4B (SH8) M28-10
CAMD5B (SH8) M28-4
CAMD6B (SH8)
CAMD7B (SH8)
SH 7


-13V
M14
IRK
RE
DIN
MK1007
CK
+5V
(SH17) SRCLK
RECIR
(SH17)
REF70
A50
REF71
A54
REF72
A52
REF73
A58
REF74
A47
REF75
A36
REF76
A38
REF77
A40
M13
IRL
IRKI0 M31 7404
IRKI1 M31 7404
IRKI2 M31 7404
IRKI3 M31 7404
IRLI4 M30 7404
IRLI5 M30 7404
TRI6 M30 7404
IRLI7 M30 7404
CARC0 (SH9) M32-3
CARC1 (SH9) M32-7
CARC2 (SH9) M32-5
CARC3 (SH9) M32-4
CARD4 (SH9) M29-4
CARD5 (SH9) M29-7
CARD6 (SH9) M29-9
CARD7 (SH9) M29-3
-13V
+5V


M33
CAMC0-3
(SH7) IRG0
(SH7) IRI0
(SH7) IRG1
(SH7) IRI1
(SH7) IRG2
(SH7) IRI2
(SH7) IRG3
(SH7) IRI3
0A
0B
1A
1B
2A
2B
3A
3B
SEL
74158
STB
(SH17) SELA/B
CARC0 (SH9) M32-2
CARC1 (SH9) M32-6
CARC2 (SH9) M32-5
CARC3 (SH9) M32-1
M28
CAMD4-7
(SH7) IRH4
(SH7) IRJ4
(SH7) IRH5
(SH7) IRJ5
(SH7) IRH6
(SH7) IRJ6
(SH7) IRH7
(SH7) IRJ7
4A
4B
5A
5B
6A
6B
7A
7B
CARD4 (SH9) M29-1
CARD5 (SH7) M29-6
CARD6 (SH7) M29-3
CARD7 (SH9) M29-2
047-19-01 REV E
SH 8

M32 CARC0-3 74298

M29 CARD4-7 74298

M31 7404 CARC2I

M61 CHROMC (UC)

M60 CHROMD (LC)

MM6280

M20 UP/LO C. 7486

M77 M75 M93 M91 ORB6 (5-8) ORA6 (1-4) ORB7 (5-8) ORA7 (1-4) 7495

IRKI0 CAMC0 IRKI1 CAMC1 IRKI2 CAMC2 IRKI3 CAMC3 (SH8)

SEL C/D (SH17) CARCK (SH17)

IRLI4 CAMD4 IRLI5 CAMD5 IRLI6 CAMD6 IRLI7 CAMD7 (SH8)

DELETE E'CN ADD JUMPER (SEE NOTE 1)

HIDCB (SH16) M73-9

B-1KDCB (SH16) M73-13

M73-12 RNKDCB (SH16)

M73-10 HIDCB

M45-1 UPDCB (SH11)

+5V R9 1.8K R10 1.8K R11 1.8K R12 1.8K R13 1.8K R14 1.8K R15 1.8K R16 1.8K

M57-5 ATDCB (SH16)

UPDCB (SH11)

M45-2

BLK6 M55-2

BLK7 M87-2

BLK8 M72-1 (SH16)

(SH17) OE

(SH3) S0

(SH3) S1

(SH3) S2

CPF22 (SH17)

CPF55 (SH17)

M77: DSR6 → M76-14, M76-12, (SH16) M76-11, M76-10

M75: UPS6 → M45-9; DSR6 → M26-9, (SH16) M73-8, M76-2

M93: DSR7 → M92-14, M92-12, (SH16) M92-11, M92-10

M91: UPS7 → M45-12; DSR7 → M92-4, (SH16) M92-3, M92-2

DSR8 → M59-14, M59-12 (SH11), M59-11, M59-10

DSR8 → M59-5, M59-9 (SH11), M59-3, M59-2

047-19-01 REV E

(SH9)

(SH1) SRLD6

M76 DSR6 74166

ORB68 ORB67 ORB66 ORB65 (SH9)

ORA63 ORA62 ORA61 (SH9)

(SH9) ORA64 (SH11) UPF6 — UPS6 M45 7408

M92 DSR7 74166

ORB78 ORB77 ORB76 ORB75 (SH9)

(SH9) ORA74 (SH11) UPF7 — UPS7 M45 7408

ORA73 ORA72 ORA71 (SH9)

(SH6) SRLD7

(SH17) OSC1

M90 7451

(SH12) CUR6*
(SH6) CURBIT
(SH12) CUR6

M90 7451

(SH12) CUR7*
(SH6) CURBIT
(SH13) CUR7

(SH17) VENB

VID6 M74 7400

VID7 M74 7400

(SH17) LOA*

VIDEO6 M43 74128 — VIDEO INPUT 6 (SH13) CR24-CATH

VIDEO6S M43 74128 — VIDEO INPUT 6S (SH19) CR27-CATH

LOA (SH17)

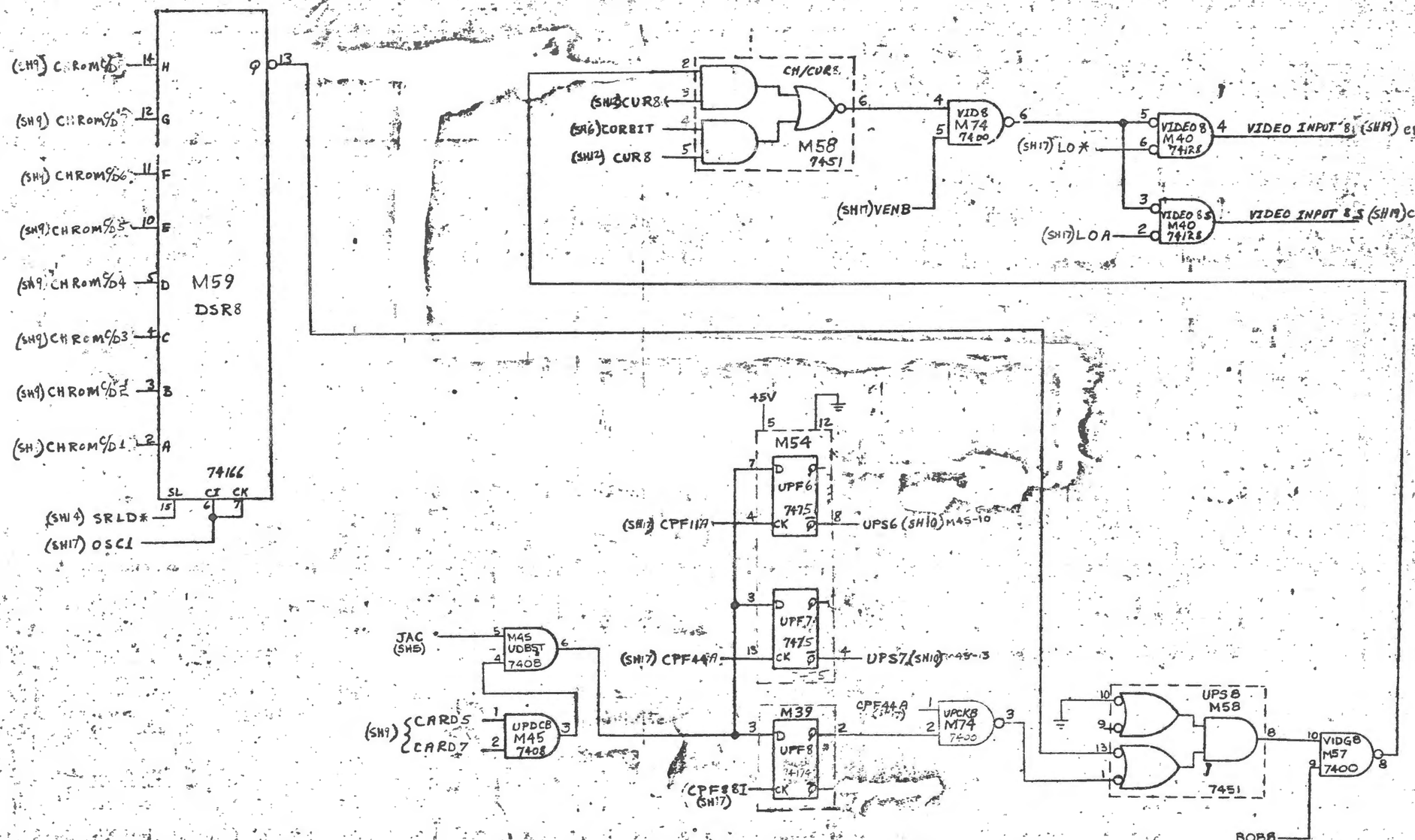
VIDEO7 M43 74128 — VIDEO INPUT 7 (SH19) CR30-CATH

VIDEO7S M43 74128 — VIDEO INPUT 7S (SH19) CR33-CATH

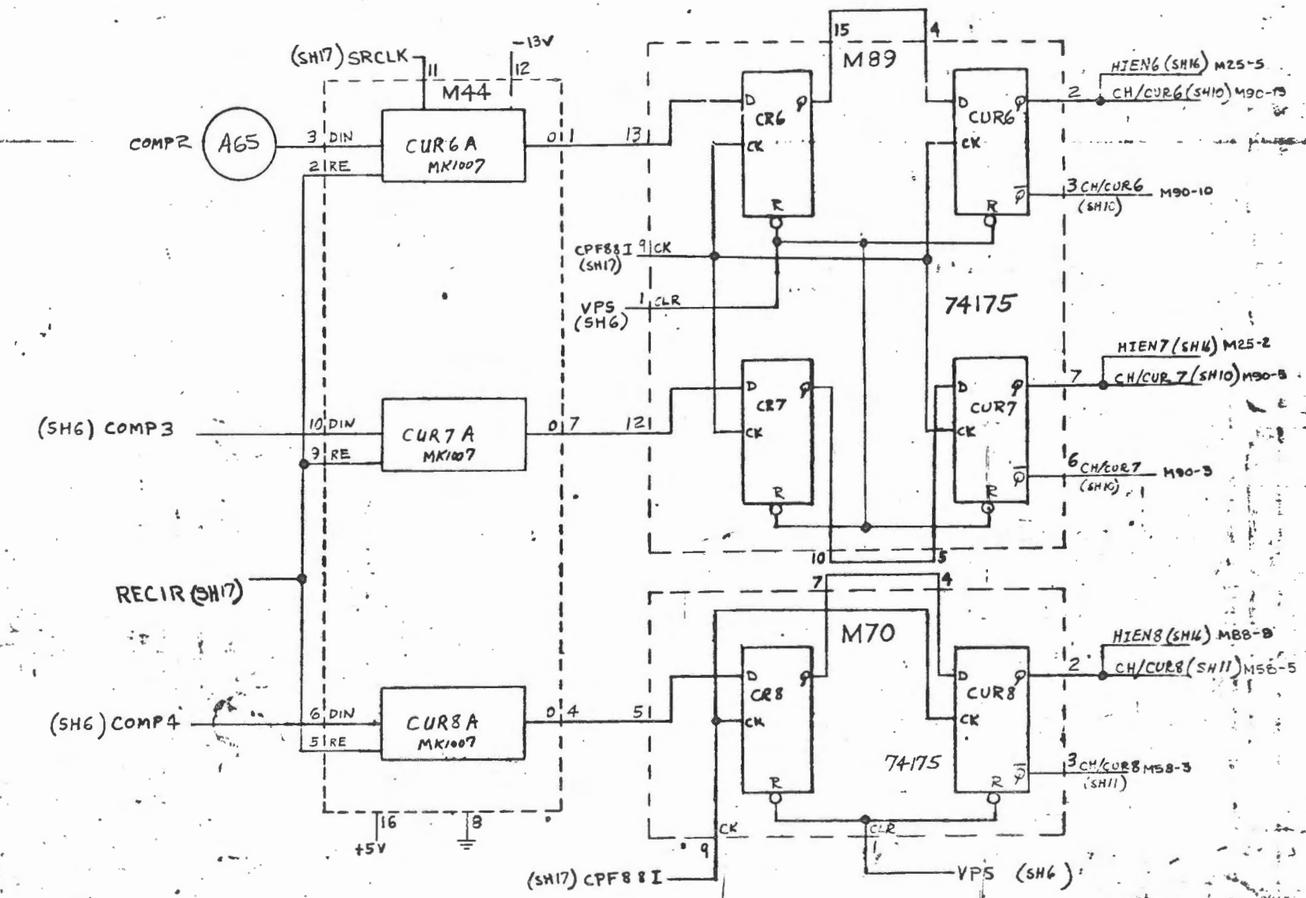
LOA (SH17)

047-19-01 REV E

SH 10

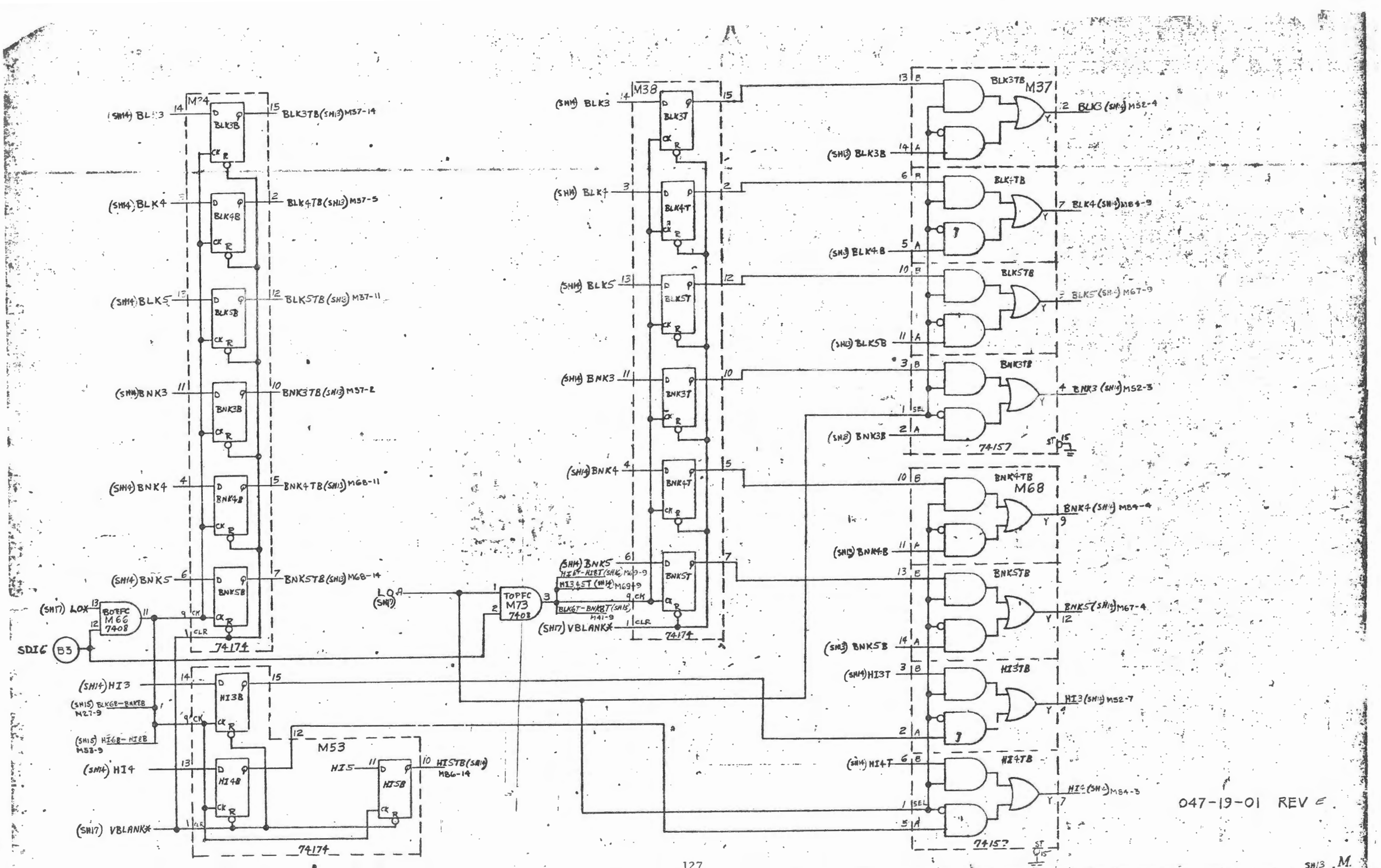


047-19-01 REV E



047-19-01 REV E

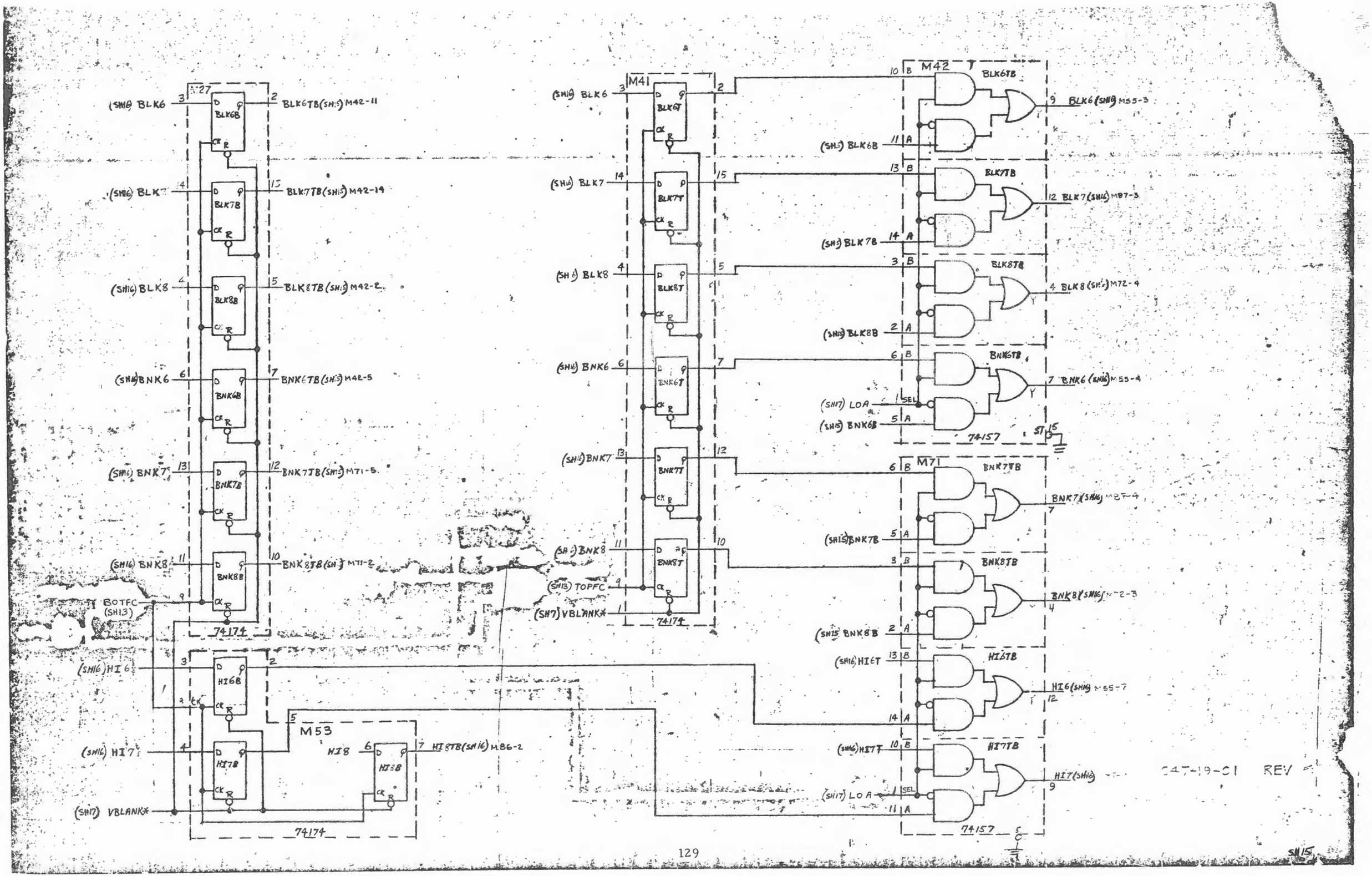
5/12

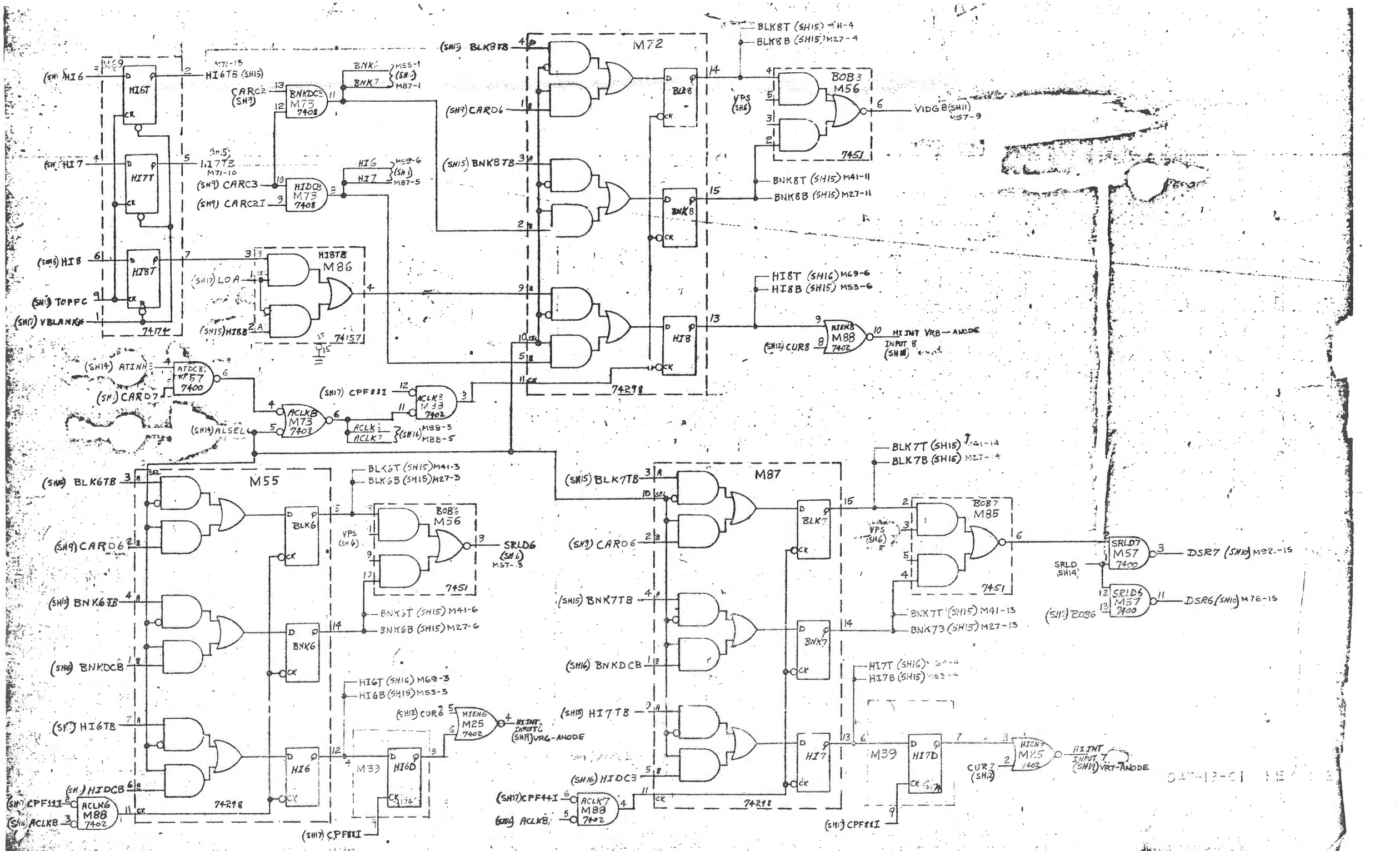


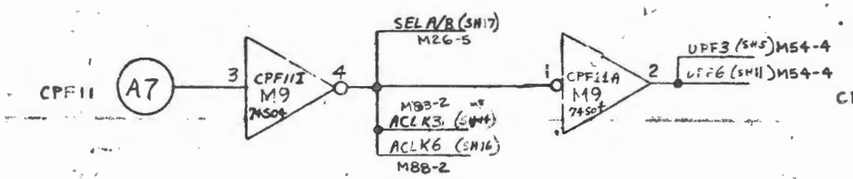
047-19-01 REV E

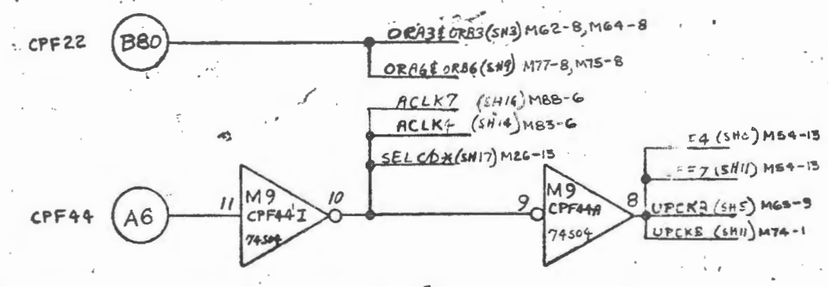
SH13 M.

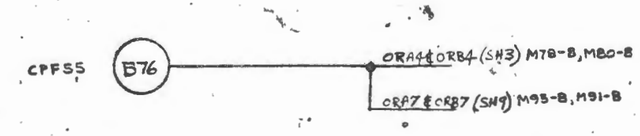
(SH4) HI3 — M69 — HI3T — HI3TB (SH13) M68-3
(SH4) HI4 — HI4T — HI4TB (SH13) M68-6
(SH4) HI5 — HI5T — 74174
(SH3) TOPFC
(SH17) VBLANK*
CAR A2 (SH3) — BNKDCA M66 7408 — BNK3 / BNK4 (SH4) M52-2, M84-1
(SH3) CAR A3 — HIDCA M66 7408 — HI3 / HI4 (SH4) M52-6, M84-2
(SH3) CAR A2I
(SH7) LOA — HI5TB M86 — 74157
(SH3) HI5B
(SH3) BLK5TB — M67 — 74298
(SH3) CARR6
(SH3) BNK5TB
BLK5T (SH13) M38-13
BLK5B (SH13) M24-13
VPS (SH3) — BOB5 M51 — 7451 — VIDG5 (SH5) M50-10
BNK5T (SH13) M38-6
BNK5B (SH13) M24-6
HI5T (SH14) M69-13
HI5B (SH13) M53-11
(SH4) CURS — HIENS M83 7402 — HI INT VR5-ANODE INPUT 5 (SH18)
ATINHS — A5 — ATDCA M50 7400 — M57-4
(SH3) CAR37
ATSEL — B28 — M21 ALSEL 7404
(SH7) CPF8II — ACLK5 A83 7402 — ACLK4 M83 7408 — ACLK3 / ACLK4 (SH4) M83-3, M83-5
BLK6-HI6 / BLK7-HI7 / BLK3-HI3 / ACLK8 — M55-10, M87-10 (SH16), M72-10, M73-5
(SH3) BLK3TB — M52 — BLK3T (SH13) M38-14, BLK3B (SH13) M24-14
(SH3) CARB6
(SH3) BNK3TB
(SH4) BNKDCA
(SH4) HI3TB
(SH4) HIDCA — ACLK3 M83 7402
(SH7) CPF8II
VPS* (SH6) — BOB3 M51 — 7451 — M50-5 SRLD3 (SH14)
BNK3T (SH13) M38-11
BNK3B (SH13) M24-11
HI3T (SH14) M69-11
HI3B (SH13) M53-14
(SH6) CUR3 — HIEN3 M25 7402 — HI INT INPUT 3 (SH11) VR3ANODE
M39 — HI3D — 74174
(SH3) BLK4TB — M84 — BLK4T (SH13) M38-3, BLK4B (SH13) M24-3
(SH3) CARB6
(SH3) BNK4TB
(SH14) BNKDCA
(SH3) HI4TB
(SH14) HIDCA
(SH7) CPF8II
(SH4) ACLKA — ACLK4 M83 7402
VPS* (SH6) — BOB4 M85 — 7451
BNK4T (SH13) M38-4
BNK4B (SH13) M24-4
HI4T (SH14) M69-14
HI4B (SH13) M53-3
M33 — HI4D — 74174
CUR4 (SH6) — HIEN4 M25 7402 — HI INT VR4-ANODE INPUT (SH12)
(SH7) CPF8II
B84 SRLD
SRLD6 / SRLD7 — M57-12 (SH16), M57-1
M7 SRLD* — 7437 — DSR5 (SH5) M48-15, DSRB (SH11) M59-15
SRLD4 M50 7400 — DSR4 (SH4) M79-15
SRLD3 M50 7400 — DSR3 (SH4) M65-15
(SH12) BOB3
047-19-01 REV F

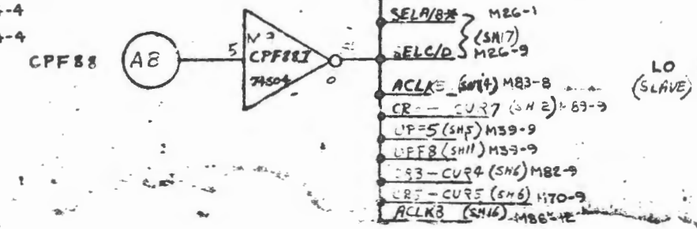

M27
(SH6) BLK6
BLK6B
BLK6TB(SH5) M42-11
(SH6) BLK7
BLK7B
BLK7TB(SH5) M42-14
(SH6) BLK8
BLK8B
BLK8TB(SH5) M42-2
(SH6) BNK6
BNK6B
BNK6TB(SH5) M42-5
(SH6) BNK7
BNK7B
BNK7TB(SH5) M71-5
(SH6) BNK8
BNK8B
BNK8TB(SH5) M71-2
BOTFC (SH13)
74174
M41
(SH6) BLK6
BLK6T
(SH6) BLK7
BLK7T
(SH6) BLK8
BLK8T
(SH6) BNK6
BNK6T
(SH6) BNK7
BNK7T
(SH6) BNK8
BNK8T
(SH3) TOPFC
(SH7) VBLANK*
74174
M42
BLK6TB
(SH5) BLK6B
BLK6 (SH6) M55-3
BLK7TB
(SH5) BLK7B
BLK7 (SH6) M87-3
BLK8TB
(SH5) BLK8B
BLK8 (SH6) M72-4
BNK6TB
(SH5) BNK6B
(SH17) LOA
BNK6 (SH6) M55-4
74157
M71
BNK7TB
(SH5) BNK7B
BNK7 (SH6) M87-4
BNK8TB
(SH5) BNK8B
BNK8 (SH6) M72-3
HI6TB
(SH6) HI6T
HI6 (SH6) M55-7
HI7TB
(SH6) HI7T
(SH17) LOA
HI7 (SH6)
74157
M53
(SH6) HI6
HI6B
(SH6) HI7
HI7B
(SH17) VBLANK*
HI8
HI8B
HI8TB(SH6) M86-2
74174
SEL
A
B
CK
R
D
Q

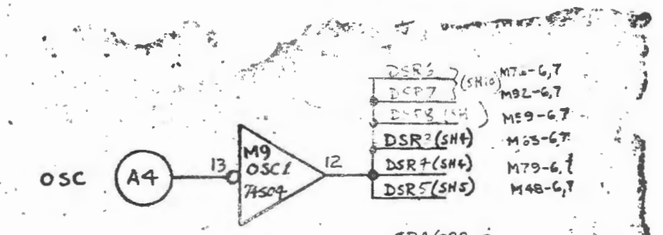

M72
74298
M55
74298
M87
74298
M69
HI6T
HI7T
HI8T
74174
M86
HI8TB
74157
M73
BNKDCB
HI6B
HI7B
7408
M57
ATDCB
7400
M33
ACLKB
ACLK7
7402
M88
ACLK6
7402
M56
BOB3
7451
M85
BOB7
M25
HIENB
HIENT
HIENG
7402
M39
HI6D
HI7D
M41-11
M27-11
M41-13
M27-13
M41-14
M27-14
M41-3
M27-3
M41-6
M27-6
M41-1
M27-1
M55-1
M87-1
M87-5
M69-6
M53-6
M69-3
M53-3
M88-3
M88-5
M57-9
M57-3
M82-15
M76-15
M87-7
M25-7
M39-9
M39-4
M39-7
M39-2
M39-12
M39-15
M39-5
M39-10
M39-13
M39-6
M39-11
M39-14
M39-3
M39-1
M39-8
M39-16
BLK8T (SH15) M41-4
BLK8B (SH15) M27-4
BNK8T (SH15) M41-11
BNK8B (SH15) M27-11
HI8T (SH16) M69-6
HI8B (SH15) M53-6
BLK7T (SH15) M41-14
BLK7B (SH16) M27-14
BLK6T (SH15) M41-3
BLK6B (SH15) M27-3
BNK6T (SH15) M41-6
BNK6B (SH15) M27-6
BNK7T (SH15) M41-13
BNK7B (SH15) M27-13
HI6T (SH16) M69-3
HI6B (SH15) M53-3
HI7T (SH16) M69-8
HI7B (SH15) M53-8
VIDG8 (SH11)
DSR7 (SH10)
DSR6 (SH10)
HI INT VRB — ANODE
HI INT VRT — ANODE
VPS (SH6)
SRLD (SH14)
SRLD6 (SH6)
(SH9) BLK8TB
(SH9) CARD6
(SH15) BNK8TB
(SH9) CARC2
(SH9) CARC2I
(SH9) CARC3
(SH9) CARD7
(SH14) ATINH
(SH14) ALSEL
(SH17) CPF88I
(SH17) CPF44I
(SH17) CPF11I
(SH16) ACLKB
(SH16) HIDCB
(SH16) HIDC3
(SH15) HI7TB
(SH15) BNK7TB
(SH15) BNK6TB
(SH15) HI6TB
(SH15) HI8B
(SH17) LOA
(SH17) VBLANK
(SH13) TOPFC
(SH12) CUR8
(SH12) CUR7
(SH12) CUR6
(SH12) BOB6
(SH14) HI6
(SH14) HI7
(SH15) HI8
HI6TB (SH15)
HI7TB (SH15)
M71-13
M71-10

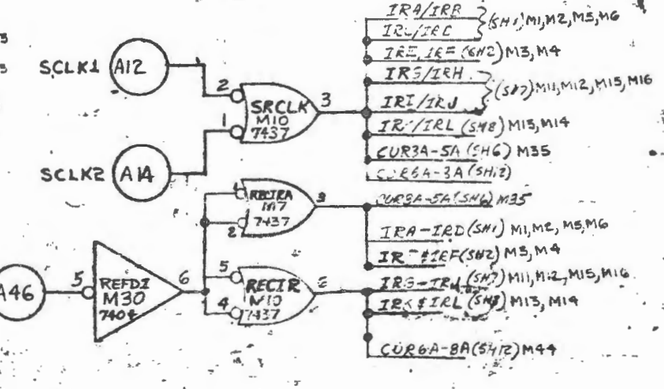


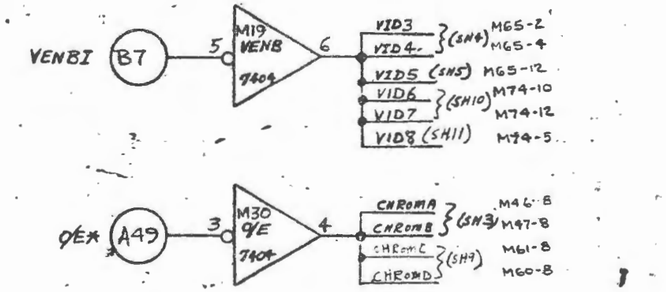


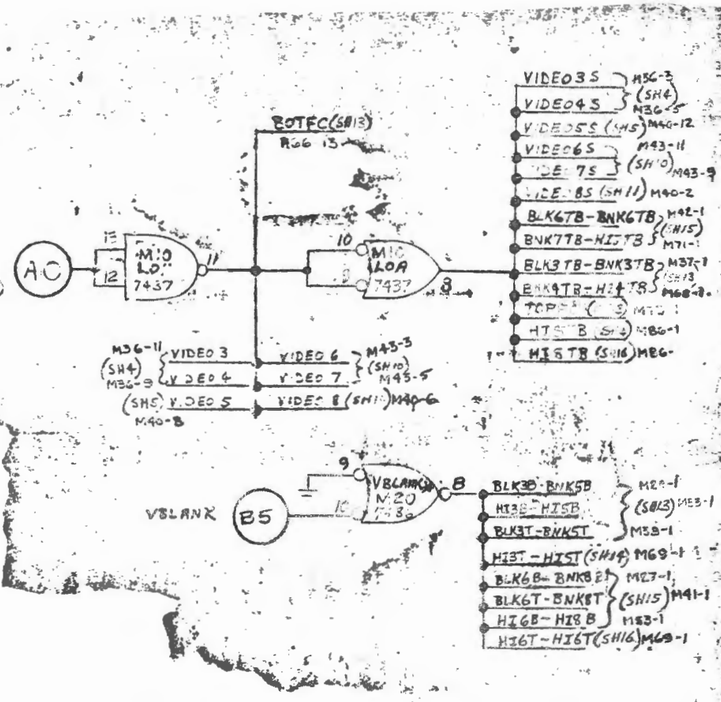


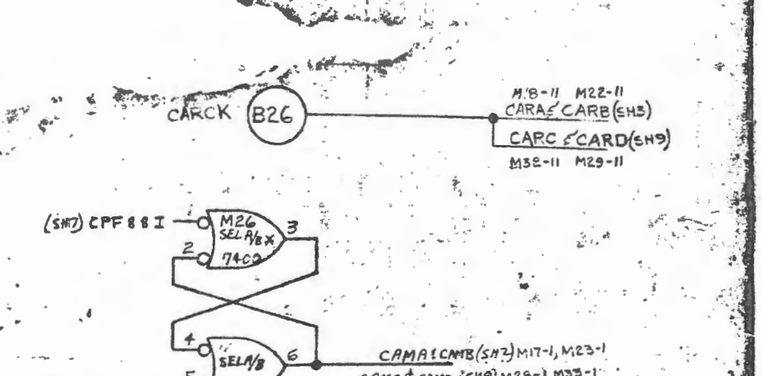












047-19-01 REV E

+5V
R18 270Ω ±5% ¼W
VREG (SH19)
CR1 IN4148
CR2 IN4148
CR3 IN4148
(SH4) HIEN 3
R23 4.7K
R24 470Ω
6.8V VR3
CR5 IN4148
5.25 3.1K
CR6 IN4148
Q2 2N3906
R25 ¼W 120Ω ±2%
R26
R27 ¼W 100Ω ±2%
Q3 2N3906
(SH4) VIDEO 3
R27 ¼W 100Ω ±2%
B14 VID OUTPUT 3
CR7 IN4148
B15 VID RET 3
(SH19) SYNC GT Q25 BASE
Q4 2N3904
R30 4.7K ±2%
R33 75Ω ±2%
R31 390Ω ±2%
R32 ¼W 100Ω
C36 100pF
-13V

(SH4) HIEN 4
R13 4.7K
R14 470Ω
6.8V VR4
CR11 IN4148
R35 3.9K
CR10 IN4148
Q8 2N3906
R37 ¼W 100Ω ±2%
R38 ¼W 120Ω ±2%
R39 ¼W 100Ω ±2%
(SH4) VIDEO 4
Q9 2N3906
B40 OUTPUT 4
CR12 IN4148
B38 VID RET 4
Q10 2N3904
R51 390Ω ±2%
R52 100Ω ¼W
C38 100pF

(SH4) HIEN 5
R65 4.7K
R66 470Ω
6.8V VR5
CR16 IN4148
R67 3.9K
CR17 IN4148
Q14 2N3906
R68 ¼W 120Ω ±2%
R69 ¼W 100Ω ±2%
(SH5) VIDEO 5
Q15 2N3906
OUTPUT 5
B66
CR18 IN4148
B64 RET 5
Q16 2N3904
R70 4.7K ±2%
R71 75Ω ±2%
R72 390Ω ±2%
R73 100Ω ¼W
C40 100pF

VR1 3.3V IN746A
CR4 IN4148
R20 2K ±5%
Q1 2N4403
R21 ±5% 270Ω 1W
VR2 6.2V IN4735A
R22 390Ω ¼W
SYNC I B24
SYNC M20 7486
-13V

CR8 IN4148
R35 3.1K
CR9 IN4148
Q5 2N3906
R36 ¼W 120Ω ±2%
R37 ¼W 100Ω ±2%
R39 ¼W 100Ω ±2%
VIDEO 3S (SH4)
Q6 2N3906
Q7 2N3904
R40 4.7K ±2%
R34 75Ω ±2%
CR10 IN4148
B16 VID OUTPUT 3S
B17 VID RET 3S
R41 390Ω ±2%
R42 100Ω ¼W
C37 100pF
C49 470pF
C50 470pF

CR14 IN4148
Q11 2N3904
R56 ¼W 120Ω ±2%
R55 3.9K
CR15 IN4148
R59 ¼W 100Ω ±2%
(SH4) VIDEO 4S
Q12 2N3906
Q13 2N3904
R60 4.7K ±2%
R54 75Ω ±2%
CR13 IN4148
B44 VID OUTPUT 4S
B42 VID RET 4S
R61 390Ω ±2%
R62 100Ω ¼W
C39 100pF

VIDEO 5S (SH5)
Q17 2N3904
R75 3.1K
Q18 2N3906
OUTPUT 5S
B69
B68 RET 5S
.01μF

ITEM NO	PART ASSY NO	DESCRIPTION

INTERTEC CORPORATION

This document contains information of INTERTEC CORPORATION and is not to be disclosed or used except in accordance with applicable agreements. Reproduction for manufacture of products other than INTERTEC CORPORATION equipment without the written permission of INTERTEC CORPORATION is prohibited. The information contained in this document is subject to change without notice. INTERTEC CORPORATION assumes no responsibility for any errors that may appear in this document. In the event that this drawing is obtained from sources other than INTERTEC CORPORATION, the correct version of the drawing may be obtained from INTERTEC CORPORATION upon request.

DATE D
FIRST RELEASE
16 OF 17

REVISION HISTORY

DESCRIPTION OF CHANGE	CHK

(SH18) VREG

+12V R87 1/4W 100Ω±2% · R88 1/4W 120Ω±2% · R89 1/4W 100Ω±2%

+5V R83 4.7K · +12V R84 470Ω

(SH16) HIEN 6 → 6.8V VR6 → CR23 IN4148 → R85 3.9K

Q20 2N3906 · R86 · CR24 IN4148

(SH10) VIDEO 6 → Q21 2N3906

2N3904 Q22 · R90 4.7K ±2% · R93 75Ω ±2% · R91 390 ±2% · R92 1/4W 100Ω C42 100pF

A71 VID OUTPUT 6 · CR25 IN4148 · A84 VID RET 6

-13V

+12V R97 100Ω±2% 1/4W · R98 120Ω±2% 1/4W · R99 100Ω±2% 1/4W

2N3906 Q23 · R96 · CR27 IN4148

CR26 IN4148 → 3.9K R95 → (SH12) VIDEO 5

Q24 2N3906

Q25 2N3904 · R100 4.7K ±2% · R94 75Ω ±2% · R101 330Ω ±2% · R102 100Ω 1/4W C43 100pF

(SH13) SYNC 6T

A61 VID OUTPUT 6S · CR28 IN4148 · A82 VID RET 6S

-13V

(SH16) HIEN 7 → 6.8V VR7 → CR29 IN4148 → R125 3.9K

+5V R103 4.7K · +12V R104 4.0Ω

2N3906 Q26 · R106 · CR30 IN4148

(SH10) VIDEO 7 → Q27 2N3906

+12V R107 100Ω±2% 1/4W · R108 120Ω±2% 1/4W · R109 100Ω±2% 1/4W

2N3904 Q28 · R110 4.7K ±2% · R111 390Ω ±2% · R113 75Ω ±2%

A45 VID OUTPUT 7 · CR31 IN4148 · A53 VID RET 7

R112 100Ω 1/4W C44 100pF

-13V

+12V R117 100Ω±2% 1/4W · R118 120Ω±2% 1/4W · R119 100Ω±2% 1/4W

2N3906 Q29 · R116 · CR32 IN4148

R115 3.9K → (SH12) VIDEO 7S

CR33 IN4148 · Q30 2N3906

Q31 2N3904 · R120 4.7K ±2% · R114 75Ω ±2%

A44 VID OUTPUT 7S · CR34 IN4148 · A43 VID RET 7S

R121 330Ω ±2% · R122 100Ω 1/4W C45 100pF

-13V

+5V R123 4.7K · +12V R124 470Ω

(SH16) HIEN 8 → 6.8V VR8 → R125 3.9K

CR35 IN4148 · Q32 · R126

+12V R127 100Ω±2% 1/4W · R128 120Ω±2% 1/4W · R129 100Ω±2% 1/4W

(SH11) VIDEO 8 → CR36 IN4148 → Q33 2N3906

Q34 · R132 4.7K ±2% · R131 390Ω ±2%

A21 VID OUTPUT 8 · CR37 IN4148 · A20 VID RET 8

R133 100Ω 1/4W C46 100pF

-13V

+12V R137 100Ω±2% 1/4W · R138 120Ω±2% 1/4W · R139 100Ω±2% 1/4W

CR38 IN4148 · Q35 · R136

3.9K R135 → CR39 IN4148 → VIDEO 8S (SH 1)

Q36 2N3906

Q36 · R140 4.7K ±2% · R129 75Ω ±2% · R141 390Ω ±2%

A18 VID OUTPUT 8S · CR40 IN4148 · A16 VID RET 8S

100Ω 1/4W C47 100pF

-13V -13V

ITEM NO	PART. ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701 702 703 704 705 706 707

INCOTERM CORPORATION — 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use all rights reserved upon this sheet."

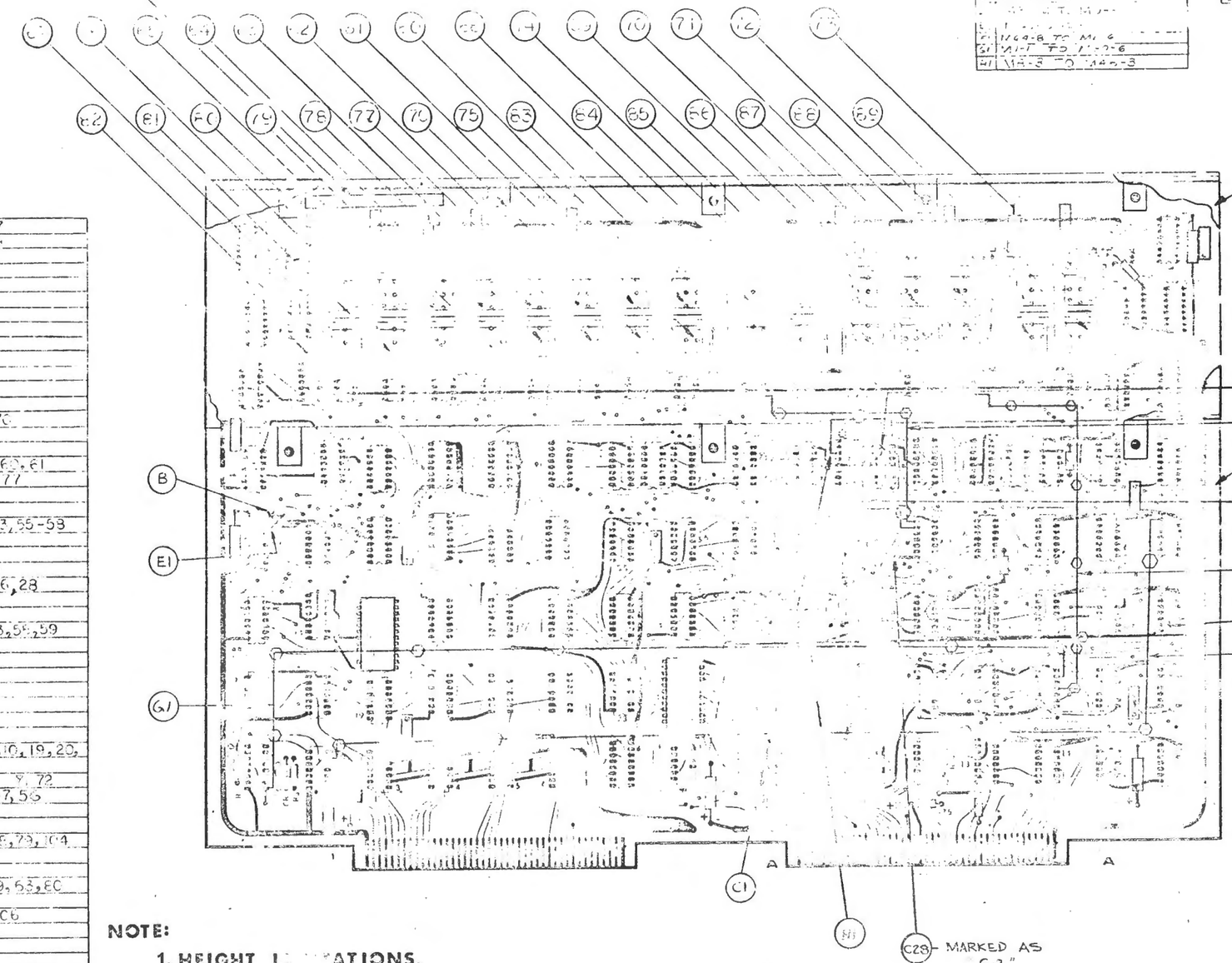
	DATE
DRAWN	
CHECKED	
ENG MGR	
APPROVED	

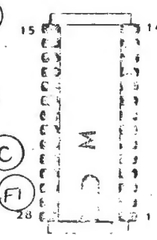
SIZE	DOCUMENT NUMBER	REV
D	047-19-01	F

SCALE — SHEET 19 OF 19

F	RELEASED/ECO 7374	
D	REVISED/ECO 3217	
E	REVISED/ECO 3217	
F	REVISED/ECO 3256	
G	REVISED/ECO 3291	
G1	REVISED/ECO 3490	
G2	REV/ECO 3640 12-6-14	
H	REV/ECO 3827 1-29-15	

SEE NOTE 2





PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
59	LSW1, 2, 3, 7
58	LSW12, 13, 14
57	LSW4
56	LSW9
55	DS1-8
54	DS9, 10, 11
53	LSW5, 6
52	LSW8-15
51	CR1, 2
50	R46-50, 54
49	R71
48	R74
47	R5-20
46	R3, 59, 64-70
45	R73
44	R62, 75
43	R2, 21-28, 60, 61 63, 72, 76, 77
42	R4
41	R1
40	R29-45, 51-53, 55-58
39	C16, 17
38	C27
37	C1-5 18, 19
36	C6-15 21-26, 28
33	M11, 27, 42, 43, 58, 59
32	M66-100
31	M70
30	M60, 69
29	M22
28	M7, 67
27	M62
26	M64, 65
25	M3, 4, 5, 6, 9, 10, 19, 20, 21, 22, 25, 26
24	M8, 47, 55 [illegible] 71, 72
23	M37, 40, 41, 57, 56
22	M1
21	M52
20	M34, 45, 46, 75, 73, 104 [illegible] 4, 103
19	M73
17	M2, 31, 48, 49, 63, 60 [illegible] 108 [illegible] 103, 106
16	M8, 46
14	M62
13	M16, 74, 75
12	M77
11	M12, 29, 30, 39, 53, 54, 74
10	M38, 44
9	M14, 15, 35, 36, 64 [illegible] 5, 13, 102, 107
8	M18, 32, 50, 61, 87 [illegible] 105, 105

NOTE:

1. HEIGHT L[illegible]ATIONS.
   COMPONE[illegible] SIDE OF BOARD 3 MAX.
   ETCH SI[illegible]E OF BOARD .090 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN, REV LABLE ITEM 90, AND MARK "ASSY NO. 047-22-02-701" AND LATEST ASSY REV
3. ATTACH JUMPER WIRES (ITEM34) TO BOARD USING GLUE (ITEM 35) IN APPROX. AREAS MARKED (O).

ITEM NO.	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITY
35	MCGLUE	HOT MELT GLUE (THERMOGRIP)	2.6
34	943-02-02-001	WIRE #24 GA SOLID	B/R
7	SWT8001	SWITCH (C[illegible] OF A)	0

ASSEMBLE USING ARTWORK 047-22-03-701 REV C

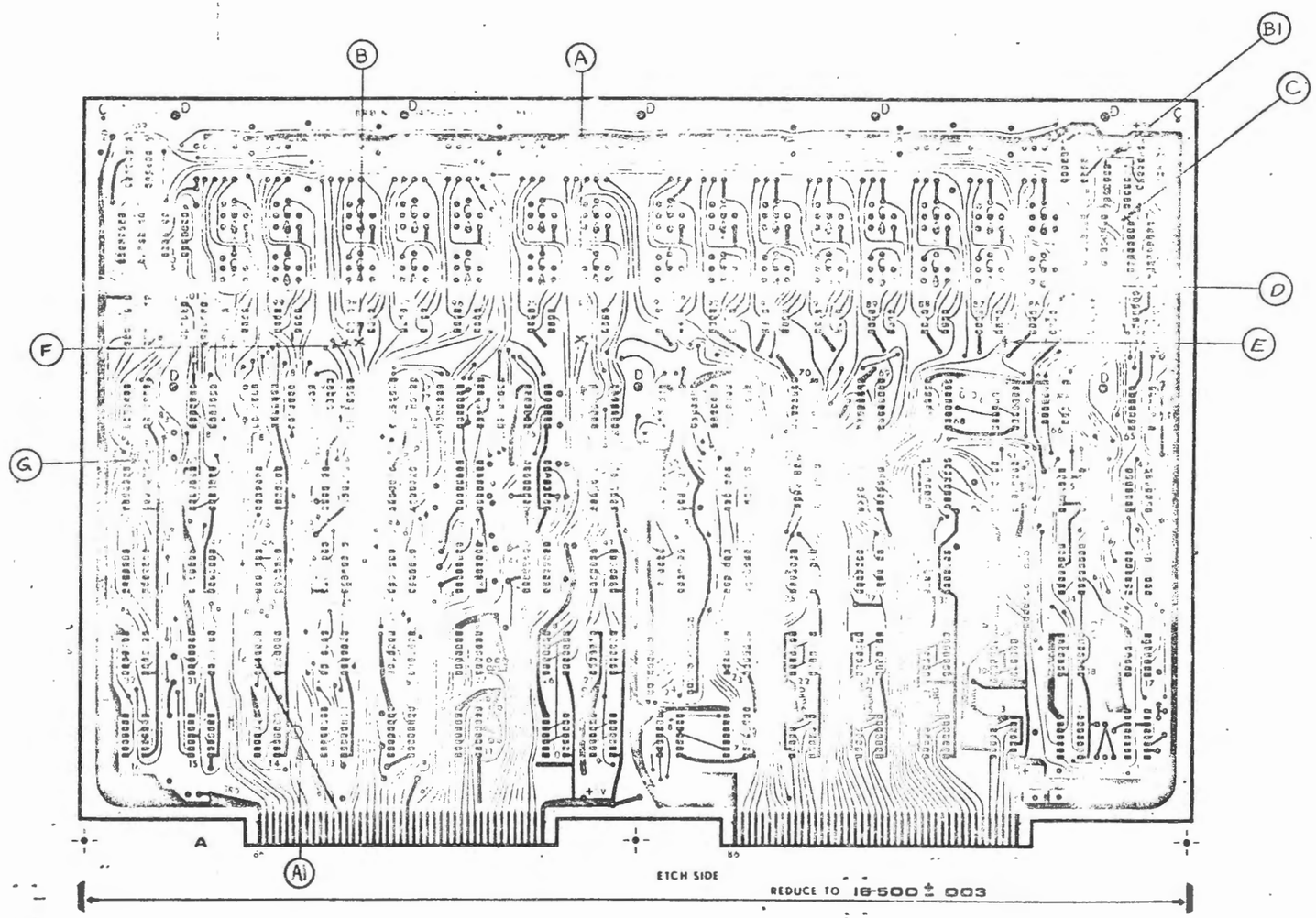
INTERFORM CORPORATION

ASSY DRAWING CLUSTER KEYBOARD CONSOLE -700

D 047-22-02 H

CUT ETCH FROM	
A	I/O PIN A9 TO M94-1
B	I/O PIN A22 TO M93-1
C	M107-2 TO M85-1
D	M85 TO TO EYELET
E	EYELET TO EYELET
F	EYELET TO EYELET
G	M84-8 TO EYELET

ADD JUMPER WIRE (ITEM 34)	
A1	I/O PIN A92 TO M90-3
31	M108-13 TO M107-2



ETCH SIDE

ASSEMBLE WITH ARTWORK 047-22-03-701 REV C

INCOTERM CORPORATION

PC BOARD ASSY
CLUSTER KEYBOARD CONSOLE — 70IC

DRAWN	Ralph French	5 Dec 73
CHECKED	[illegible]	12 Dec 73
ENGINEER	[illegible]	14/12/73
	[illegible]	14/12/73

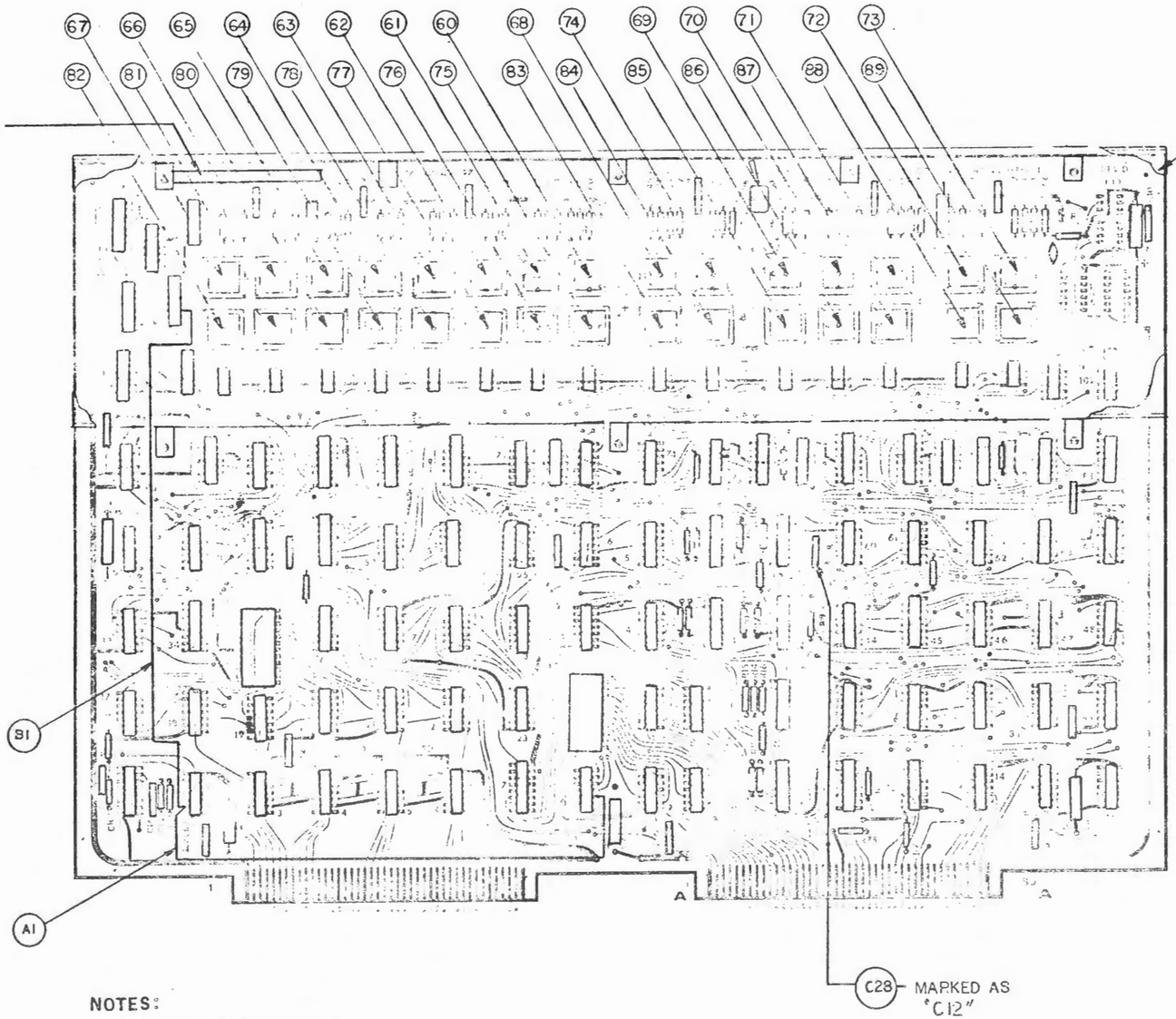
NEXT USED ON

D 047-22-02 H

SHT 2 OF 3

ADD JUMPER WIRE (ITEM 34) FROM	
A1	M2-13 TO M8-3
B1	M104-3 TO M2-13

ITEM NO.	REFERENCE DESIGNATION
59	LSW 1,2,3,7
58	LSW17,18,19
57	LSW4
56	LSW16
55	DS1-8
54	DS9,10,11
53	LSW5,6
52	LSW8-15
51	CR1,2
50	R46-50,54
49	R71
48	R74
47	R5-20
46	R3,59,64-70
45	R73
44	R62,75
43	R2,21-28,60,61 63,72,76,77
42	R4
41	R1
40	R29-45,51-53,55-58
39	C16,17
38	C27
37	C1-5,18,19
36	C6-15,21-26,28
35	
34	
33	M11,27,42,43,58,59
32	M86-100
31	M70
30	M68,69
29	M23
28	M7,107
27	M102
26	M24,35
25	M3-6,9,10,19,20,21,22, 25,26
24	M38,47,55,71,72
23	M37,40,41,57,56
22	M1
21	M52
20	M34,45,76,73,79,104
19	M81,84,103
18	M73
17	M2,31,48,49,63,80 83,101,108
16	M12,13,103,106
15	M19,46
14	M62
13	M16,66,75
12	M77
11	M14,28,30,39,53,54,74
10	M36,44
9	M17,26,32,33,50,64 65,81,82,110
8	M8,15,60,91,67 85,105
7	SW1
6	
5	
4	
3	
2	
1	



PIN NUMBERING AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD 2.13 MAX
   ETCH SIDE OF BOARD .090 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 90.
   AND MARK ASSY NO. 047-22-02-701 AND LATEST ASSY REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-22-03-701 REV D

		P.C. BOARD ASSY CLUSTER KEYBOARD CONSOLE -701D	
		D	047-22-02 H
		1:1	3 OF 3

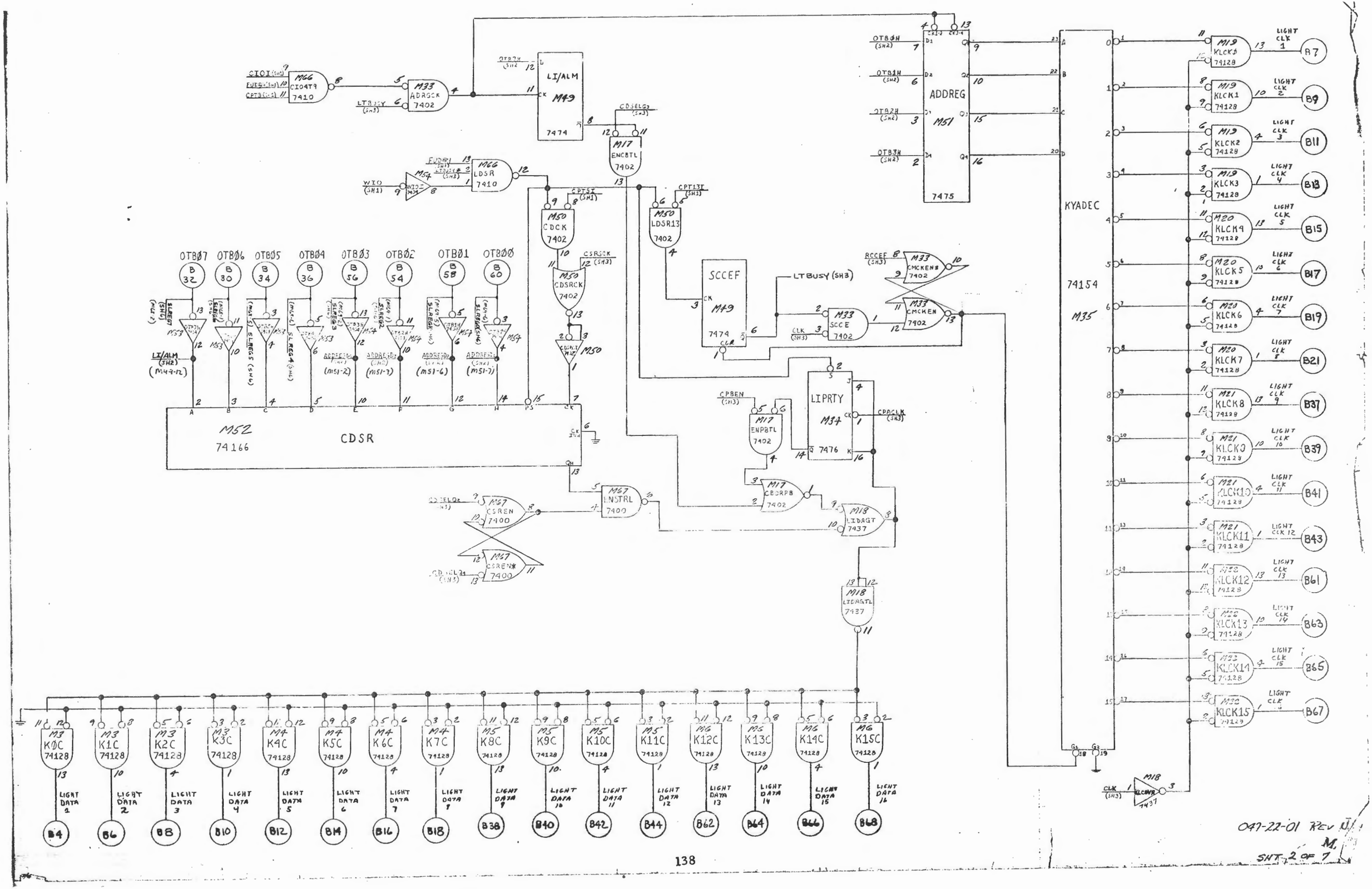
REV	DESCRIPTION	CHK	APP
A	RELEASED/ECO 3038		
B	REVISED/ECO 3038		
C	REVISED/ECO 3217		
D	REVISED/ECO 3226		
E	REVISED/ECO 3237		
1	ENG REL		
2	REV. NO FUNCTION CHG		
3	REV. TO AGREE WITH REV C ART W/ CK		

REV	DESCRIPTION	CHK	APP
F	REVISED/ECO 3290		
G	REVISED/ECO [illegible]		
H	REV/ECO 3640 12-6-74		
J	REV/ECO 3827 1-29-75		

LOGIC DIAGRAM
CLUSTER KEYBOARD
& CONSOLE CONT. - 001

047-22-01 J

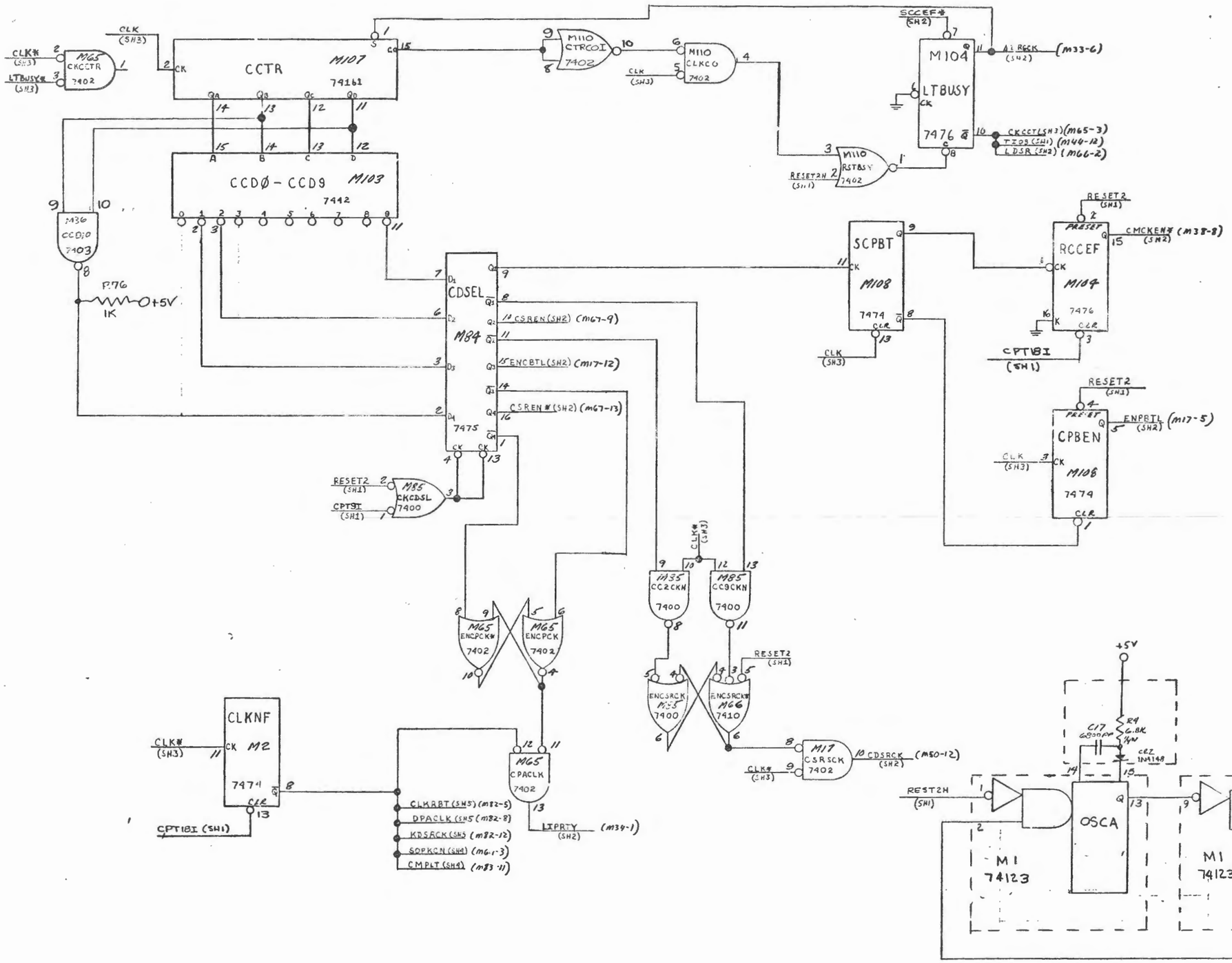
1 OF 7



047-22-01 REV J

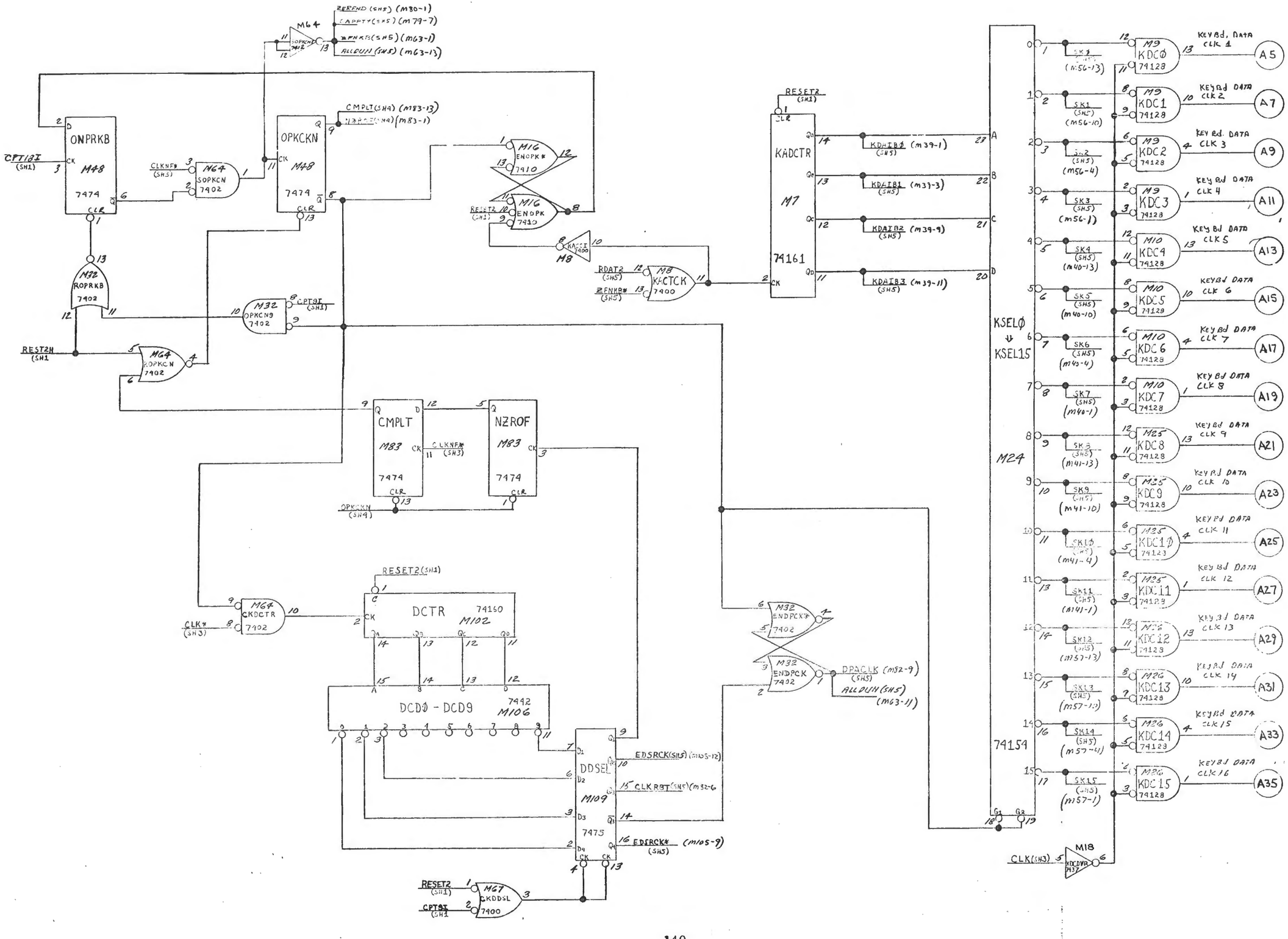
M.

SHT 2 OF 7



047-22-01 Rev J.

SH 3 OF 7



047-22-01 Rev J
SHT 4 OF 7 M

(R5 R20 202)

74125

A16 KEYBD DATA 1 — R5 1202 VARIST — 8T19 KDØ — M58 — KSELØ (SH4) — SK0 — M56

A14 KEYBD DATA 2 — R6 — 8T19 KD1 — M58 — KSEL1 (SH4) — SK1 — M56

A18 KEYBD DATA 3 — R7 — 8T19 KD2 — M58 — KSEL2 (SH4) — SK2 — M56

A12 KEYBD DATA 4 — R8 — 8T19 KD3 — M42 — KSEL3 (SH4) — SK3 — M56

A10 KEYBD DATA 5 — R9 — 8T19 KD4 — M42 — KSEL4 (SH4) — SK4 — M40

A20 KEYBD DATA 6 — R10 — 8T19 KD5 — M42 — KSEL5 (SH4) — SK5 — M40

A22 KEYBD DATA 7 — R11 — 8T19 KD6 — M11 — KSEL6 (SH4) — SK6 — M40

A24 KEYBD DATA 8 — R12 — 8T19 KD7 — M11 — KSEL7 (SH4) — SK7 — M40

A26 KEYBD DATA 9 — R13 — 8T19 KD8 — M11 — KSEL8 (SH4) — SK8 — M41

A28 KEYBD DATA 10 — R16 — 8T19 KD9 — M27 — KSEL9 (SH4) — SK9 — M41

A30 KEYBD DATA 11 — R15 — 8T19 KD10 — M27 — KSEL10 (SH4) — SK10 — M41

A32 KEYBD DATA 12 — R14 — 8T19 KD11 — M27 — KSEL11 (SH4) — SK11 — M41

A40 KEYBD DATA 13 — R17 — 8T19 KD12 — M43 — KSEL12 (SH4) — SK12 — M57

A37 KEYBD DATA 14 — R18 — 8T19 KD13 — M43 — KSEL13 (SH4) — SK13 — M57

A44 KEYBD DATA 15 — R19 — 8T19 KD14 — M43 — KSEL14 (SH4) — SK14 — M57

A46 KEYBD DATA 16 — R20 — 8T19 KD15 — M59 — KSEL15 (SH4) — SK15 — M57

74125

RPTBIT M101 7474 — RPTINB (SH5) (M72-2)

M82 CLKRBT 7402 — CLKNFR (SH3) — DDSELQ3 (SH4)

ALLDUN M63 7474 — ENDPCK (SH4) — SOPKCNI (SH4)

M82 SORDY 7402

DATRDY M101 7474 — READY (SH1) (M45-4)

READY* (SH1)

SOPKCNI (SH4)

DAPRTY M79 7476

ZERFND M80 7474 — SOPKCNI (SH4)

ZFNKB M63 7474 — KACTCK (SH4) (M8-13) — SOPKCNI (SH4)

M61 BADPAR 7400

M82 DPACLK 7402 — CLKNFR (SH3) — ENDPCK (SH4)

M39 DATA 7409

M23 KDSR 74164

M82 KDSRCK 7402 — CLKNFR (SH3)

M105 EDSRCK 7400 — DDSELQ2 (SH4)

M105 EDSRCK 7400 — DDSELQ4 (SH4)

M71 KDC13Q — INB00 (SH6) (M70-4)

M71 KDC13P — INB01 (SH6) (M70-7)

M71 KDC13N — INB02 (SH6) (M70-9)

M71 KDC13M — INB03 (SH6) (M70-12)

M38 KDC13K — INB04 (SH6) (M37-C)

M38 KDC13J — INB05 (SH6) (M37-3)

M38 KDC13H — INB06 (SH6) (M37-11)

M38 KDC13F — INB07 (SH6) (M37-8)

M55 KDATB — M72 RPTBIT — RPTBIT (SH5)

M55 KDATA — M39 KADCTRQA (SH4)

M55 KDATB — M39 KADCTRQB (SH4)

M55 KDATA — M39 KADCTRQC (SH4)

M55 KDATB — M39 KADCTRQD (SH4)

M39 KADCAK — AIRDAK (SH1)

RIALAK (SH1) — M54 — READY (M45-16) (SH1)

M8 RDAT2 7400 — CPT2 (SH2) — KACTCK (SH4) (M8-12)

SEPARATE POWER DISTRIBUTION FOR LIGHTS & LIGHT DRIVERS

+5V (B2) → Vcc FOR ALL LIGHTS & 75451
25uf 12V C18, 25uf 12V C19, .1 C21 THRU C26 — 6 CAPS @ 2 AMPS
GND (A05) → GND FOR ALL 75451
LOCATE AT TOP CORNERS @ 2 PLACES

RDGATE 7451
(SH1) RIOI
(SH1) FUDAH
(SH7) SENBO
(SH7) SENSFO
M73
ACK2I (SH1) (MBI-2) (MBI-3)

(SENS) LSW16
(SH7) SENSFO* → SENDR M94 75451
+5V, 100Ω R29

LSW8 — SSW7 — R21 1K — SSW7DR M86 75451 — (7) LSW8 — +5V, 100Ω R30
LSW9 — SSW6 — R22 1K — SSW6DR M87 75451 — (6) LSW9 — +5V, 100Ω R31
LSW10 — SSW5 — R23 1K — SSW5DR M83 75451 — (5) LSW10 — +5V, 100Ω R32
LSW11 — SSW4 — R24 1K — SSW4DR M82 75451 — (4) LSW11 — +5V, 100Ω R33
LSW12 — SSW3 — R25 1K — SSW3DR M80 75451 — (3) LSW12 — +5V, 100Ω R34
LSW13 — SSW2 — R26 1K — SSW2DR M81 75451 — (2) LSW13 — +5V, 100Ω R35
LSW14 — SSW1 — R27 1K — SSW1DR M92 75451 — (1) LSW14 — +5V, 100Ω R36
LSW15 — SSW0 — R28 1K — SSW0DR M93 75451 — (0) LSW15 — +5V, 100Ω R37

LATCHING SWITCHES CUT=OFF

SSINB07 IRS CONT M37 → INB07 ← (SH5) RPTINB, KDDIB7 → B70
SSINB06 IRS CONT M37 → INB06 ← (SH5) KDDIB6 → B78
SSINB05 IRS CONT M37 → INB05 ← (SH5) KDDIB5 → B74
SSINB04 IRS CONT M37 → INB04 ← (SH5) KDDIB4 → B72
SSINB03 CONT → INB03 ← (SH5) KDAIB3, KDDIB3 → B76
SSINB02 (0-3) → INB02 ← (SH5) KDAIB2, KDDIB2 → B80
SSINB01 (MUX) → INB01 ← (SH5) KDAIB1, KDDIB1 → B82
M70
SSINB00 → INB00 ← (SH5) KDAIB0, KDDIB0 → B84
SEL (M→B)

INBSEL M77 08
(SH7) SENSF1* , SENBO

(SH7) LGT TEST

(SH2) OTBØ7 → MAR07 (B26) → SLREGB (4-7) M68 → ρ7, ρ6, ρ5, ρ4
(SH2) OTBØ6
MAR06 (B24)
(SH2) OTBØ5
MAR05 (B20)
(SH2) OTBØ4
MAR04 (B22)
(SH6) LGTSTB
BOOTA* (SH7)
(MUXREG) 74298, (M→B) SEL

SL7DR M86 75451 — (7) DS1 — +5V, 100Ω R38
SL6DR M87 75451 — (6) DS2 — +5V, 100Ω R39
SL5DR M88 75451 — (5) DS3 — +5V, 100Ω R40
SL4DR M89 75451 — (4) DS4 — +5V, 100Ω R41

(SH7) LGT TEST

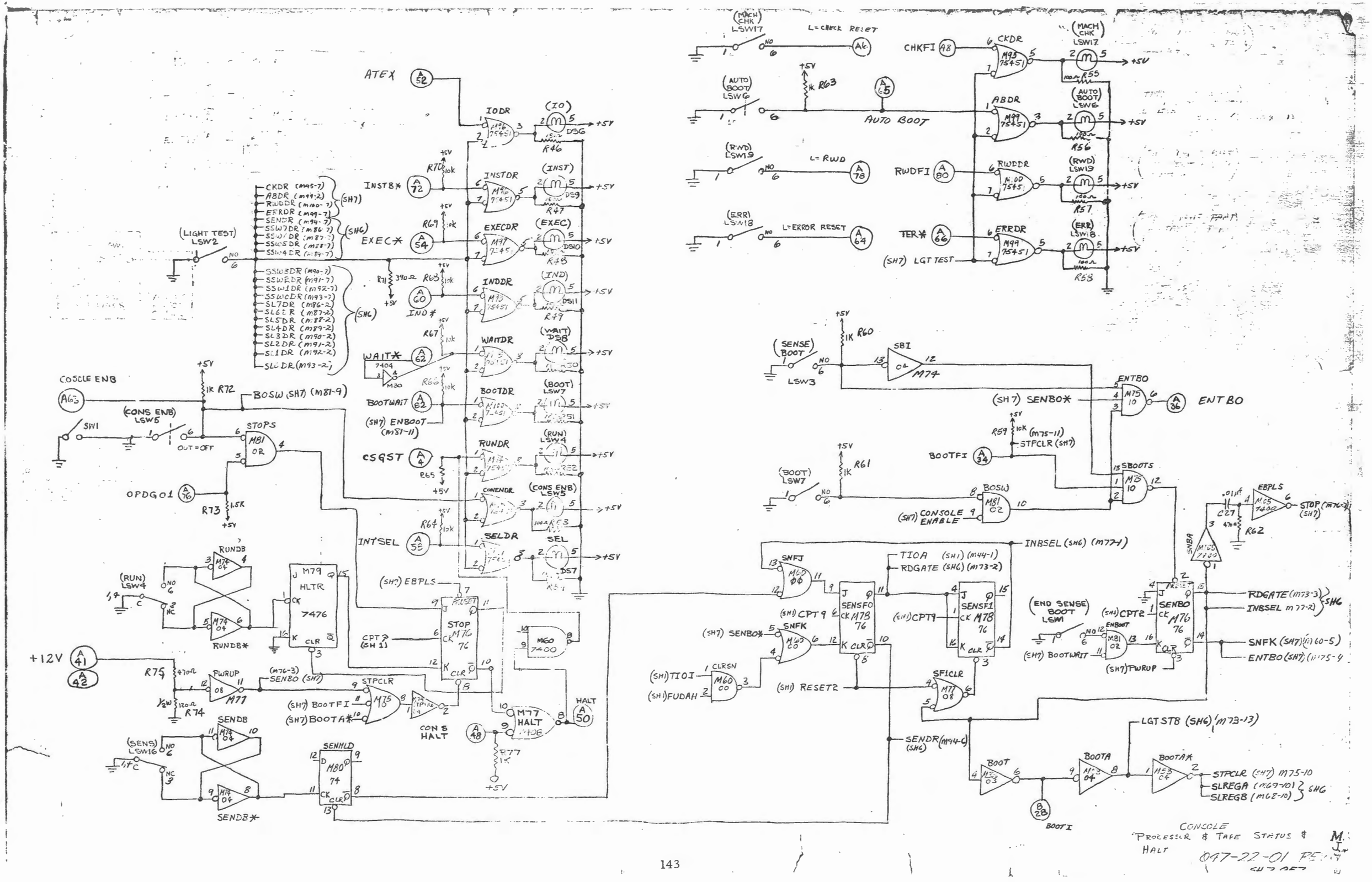
(SH2) OTBØ3 → MAR03 (B52) → SLREGA (0-3) M69 → ρ3, ρ2, ρ1, ρØ
(SH2) OTBØ2
MAR02 (B50)
(SH2) OTBØ1
MAR01 (B46)
(SH2) OTBØØ
MAR00 (B48)
BOOTA* (SH7)

SL3DR M90 75451 — (3) DS5 — +5V, 130Ω R42
SL2DR M91 75451 — (2) LSW1 — +5V, 130Ω R43
SL1DR M92 75451 — (1) LSW2 — +5V, 100Ω R44
SL0DR M93 75451 — (0) LSW3 — +5V, 100Ω R45

LGTSTB 7451
(SH1) CIOTI3, FUDAH
(SH7) BOOTA, CPT9
M73
→ SLREGB (SH6) (MUX-11)

R29 THRU R58 180Ω ¼W RESISTORS

CONSOLE SENSE SWITCH & PROGRAM LIGHTS
047-22-01. REV J
SH 6 OF 7


ATEX
IODR
(IO) DS6
R46
INSTR*
INSTDR
(INST) DS9
R47
EXEC*
EXECDR
(EXEC) DS10
R48
IND*
INDDR
(IND) DS11
R49
WAIT*
WAITDR
(WAIT) DS8
R50
BOOTWAIT
BOOTDR
(BOOT) LSW7
R51
(SH7) ENBOOT (M81-11)
CSGST
RUNDR
(RUN) LSW4
R52
CONENDR
(CONS ENB) LSW5
R53
INTSEL
SELDR
SEL DS7
R54
(SH7) EBPLS
(LIGHT TEST) LSW2
CKDR (M95-7)
ABDR (M99-2)
RWDDR (M100-7)
ERRDR (M99-7)
SENDR (M94-7)
SSW7DR (M86-7)
SSW6DR (M87-7)
SSW5DR (M88-7)
SSW4DR (M89-7)
(SH6)
SSW3DR (M90-7)
SSW2DR (M91-7)
SSW1DR (M92-7)
SSW0DR (M93-7)
SL7DR (M86-2)
SL6DR (M87-2)
SL5DR (M88-2)
SL4DR (M89-2)
SL3DR (M90-2)
SL2DR (M91-2)
SL1DR (M92-2)
SL0DR (M93-2)
(SH5)
R71 390Ω
R63 10K
R70 10K
R69 10K
R67 10K
R66 10K
R65
R64 10K
CONSOLE ENB
(CONS ENB) LSW5
SW1
OUT=OFF
STOPS
M81 OR
OPDG01
R73 1.5K
R72 1K
BOSW (SH7) (M81-9)
RUNDB
(RUN) LSW4
RUNDB*
M79 HLTR 7476
STOP M76 76
CPT7 (SH 11)
M60 7400
+12V
R75 470Ω
R74 120Ω ½W
PWRUP
(M76-3) SENDB (SH7)
STPCLR
(SH7) BOOTFI
(SH7) BOOTA*
M75 10
CONS HALT
M77 HALT
HALT
R77 1K
SENDB
(SENS) LSW16
SENDB*
SENHLD
M80 74
(MACH CHK) LSW17
L=CHECK RESET
CHKFI
CKDR
M95 75451
R55 100Ω
(AUTO BOOT) LSW6
R63 1K
AUTO BOOT
ABDR
R56 100Ω
(RWD) LSW19
L=RWD
RWDFI
RWDDR
R57 100Ω
(ERR) LSW18
L=ERROR RESET
TER*
ERRDR
R58 100Ω
(SH7) LGT TEST
(SENSE) BOOT LSW3
R60 1K
SBI M74
ENTBO
(SH7) SENBO*
ENTBO
R59 10K (M75-11)
STPCLR (SH7)
BOOTFI
SBOOTS
(BOOT) LSW7
R61 1K
BOSW
(SH7) CONSOLE ENABLE
.01μF C27
EBPLS
STOP (M76-4) (SH7)
R62 470Ω
SNBA
INBSEL (SH6) (M77-1)
SNFJ
TIOA (SH1) (M44-1)
RDGATE (SH6) (M73-2)
SENSF0 M78 76
SENSF1 M78 76
SENBO M76 76
RDGATE (M73-3)
INBSEL M77-2
SHG
(END SENSE BOOT LSW1)
(SH1) CPT9
(SH1) CPT2
(SH7) SENBO*
SNFK
(SH1) TIOI
CLRSN
(SH1) FUDAH
(SH1) RESET2
(SH7) BOOTWRIT
ENBOOT
(SH7) PWRUP
SNFK (SH7) (M60-5)
ENTBO (SH7) (M75-4)
SFICLR
SENDR (M94-6) (SH6)
LGTSTB (SH6) (M73-13)
BOOT
BOOTA
BOOTA*
STPCLR (SH7) M75-10
SLREGA (M69-10)
SLREGB (M68-10)
SHG
BOOTI
CONSOLE PROCESSOR & TAPE STATUS & HALT
047-22-01 REV

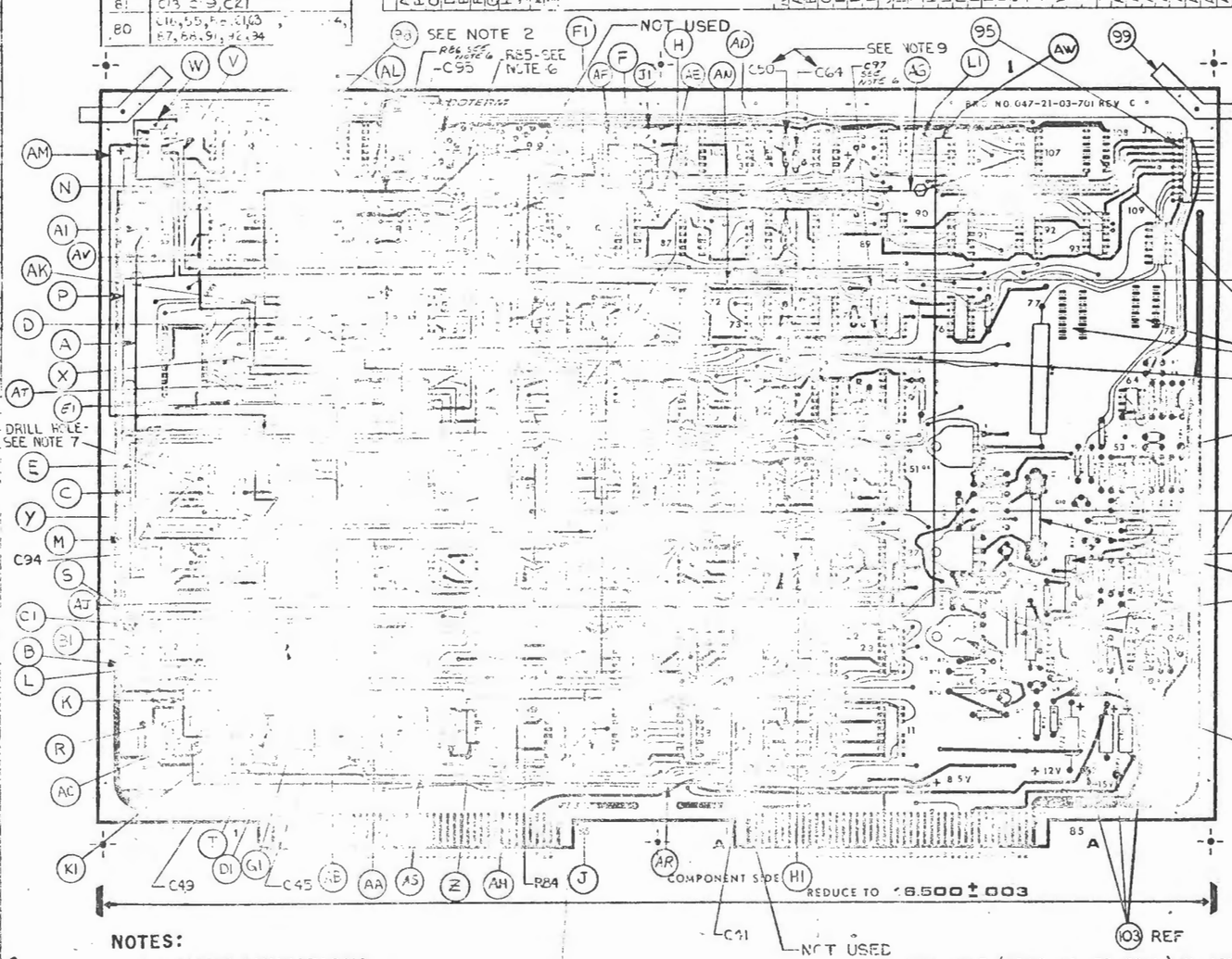
ITEM NO.	REFERENCE DESIGNATION
79	C7,9,11,12
78	C4,6,49
77	C[illegible],25,26
76	C[illegible],17, ,22,23,27-47, 50,51,90,95, 97
75	C48
74	CR5,7
73	C45
72	
71	R67,71
70	CR2,9,13,14
69	CR3
68	CR1,2,4,11,12,15,16,22,23,24
67	R7-2,48,43,84
66	R61
65	
64	R47, R10
63	R37
62	
61	R12,15
60	R64,82
59	R81
58	R3,50
57	
56	R65,69
55	R13,27
54	R57
53	
52	
51	
50	C60
49	R77,78
48	R51,53,59,62,73
47	
46	R20
45	R9,14,31
44	
43	R4,6,16,23,24,27,29,32,85,87 33,35,58,60,66,68,70,72,46,53
42	R5,21,26,30,34,42,43,76
41	R25,40,41
40	R2
39	R1
38	R11
37	R7,38,39
36	Q6,8
35	Q5,7
34	Q4
33	Q2,3
32	Q9,10
31	
30	M30
29	M25,39,53,64
28	M24
27	M[illegible]11
26	M7,8
25	M[illegible]9
24	M[illegible]E
23	M[illegible]4,44,63,[illegible]0,39
22	M[illegible]1,36
21	M[illegible]1
20	M[illegible]35
19	M[illegible]2,45,46,51,81,86,72,89,95,97
18	M[illegible]80,82,73,92,101
17	M79
16	M[illegible]4,40,55,105
15	M[illegible]23,50,69,70,100,109
14	M[illegible]76
13	M[illegible]3,59
12	M[illegible]43,54,66,[illegible] 106
11	M18,58,67,74
10	M[illegible]3,17,19,33,40,47,57,62,71,80,83,107
9	M[illegible]4,6,26,29,31,32,41,56,60,84,[illegible]94
8	M27,75,104,98
7	M37,88,102,103
6	
5	
4	
3	
2	
1	

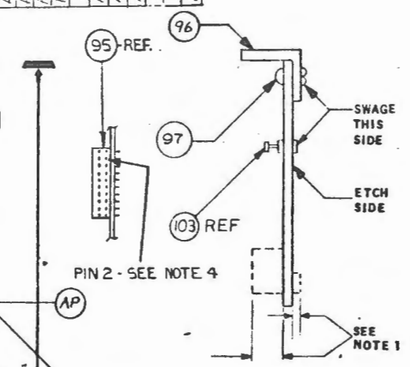
108	C96
94	C92
90	
89	C77, 80
88	[illegible]
87	R86
86	C91,72,81
85	C97,60,93
84	C83, C59, C[illegible]2, C[illegible]4
83	
82	C24
81	C13, C19, C21
80	C[illegible]5,55, [illegible]C[illegible]3, [illegible]4, [illegible]7,88,91,[illegible]2,94

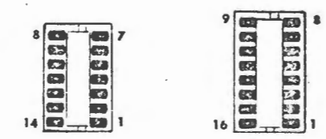
	CUT ETCH FROM	TO	EYELET
A	M19-12	M12-2	M2-14
B	M12-2	M12-11	M12-14
C	M12-11	M2-2	M2-14
D	M2-2	M5-12	M5-14
E	M5-12	M46-11	M46-14
F	M46-11	M14-10	M14-5
G	M14-10	E1(11)	M101-10
H	E1(11)	M101-8	M101-14
J	M101-8	M14-15	M14-5
K	M14-15	M106-9 AT M106-9	

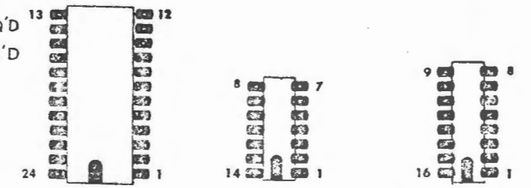
	ADD JUMPER WIRE (TEFLON) FROM	TO	EYELET
A	M42-15	M79-12	M79-12
B	M14-9	M26-12	M26-14
C	M26-12	M14-6	M14-6
D	M14-6	M26-11	M26-14
E	M26-11	M11-10	M11-14
F	M11-10	M45-15	M45-14
G	M45-15	M11-13	M11-14
H	M11-13	M9-8	M9-14
J	M9-8	M47-3	M47-14
K	M47-3	M47-4	M47-14
L	M47-4	M42-9	M42-14
M	M42-9	M12-9	M12-14
N	M12-9	M42-2	M42-14
P	M42-2	M12-10	M12-14
R	M12-10	M9-15	M9-14
S	M9-15	M9-9	M9-14
T	M9-9	M55-12	M55-14
V	M55-12	M46-9	M46-14
W	M46-9	M42-15	M42-14
X	M42-15	M39-10 TO M39-11	
Y	M39-11	M14-8	M14-14
AA	M14-8	M14-4	M14-5
AC	M14-4	E1(11)	EYELET(11)
AE	E1(11)	M101-10	M101-14
AF	M101-10	M101-8	M101-14
AG	M101-8	M101-3 TO M101-5	M101-14
AH	M101-5 TO M46-2	M46-2 TO M46-14	EYELET
AK	M46-14	M3-11	M3-14
AL	M39-13 TO M42-10	M42-10 TO M94-10	M94-10
AM	M94-10	M99-4	M99-4
AP	M99-4	M114-13 TO M114-11	M114-13
AR	M114-11 TO M114-4	M114-4	M114-4
AS	M114-4 TO M114-11	M114-11	M114-11
AT	M55-10 TO M114-11	M114-11	M114-11
AV	M43-8 TO M114-7	M114-7	M114-7
AW	M27-2 TO M106-9	M114-5	EYELET(11)

		RELEASED/RD8737E	K	K
C		REVISED/ECO 3057	C2	C2
D		REVISED/ECO 3093	D2	D2
E		REVISED/ECO 3206 4/11/74	N/A	N/A
F		REVISED/ECO 3206A 4/18/74	N/A	N/A
G		REVISED/ECO 3206A 4/18/74	N/A	N/A
H		REVISED/ECO 3227 4/30/74	H	
J		REVISED/ECO 3245 5/14/74	J	J
	J1	REVISED/ECO 3554	J1	J1
	J2	REVISION LEVEL 3328		
K		REVISED ECO 3401 8/13/74	K	K
	K1	PEN CHG/ECO 3401 9/6/74	K1	K1
L		REV/ECO 3444 10-18-74	L	L
M		REV/ECO 3450 10-18-74	M	M
	M1	REV/ECO 3629 12-9-74	M1	M1
	M2	REVISED/ECO 3819 1/16/75	M2	M2









PIN NUMBERING AND ORIENTATION

MAKE COPIES FULL SIZE,
DO NOT REDUCE

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-21-03-701 REV C

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 98. AND MARK ASSY NO. 047-21-02-701 AND LATEST ASSY REVISION.
3. BEND LEADS OF R37 TO FIT HOLE PATTERN.
4. CUT PIN 2 OF ITEM 95 FLUSH TO PIN HOUSING AS SHOWN.
5. ADD TAPE (ITEM 92) TO P.C. BOARD ETCH TO PREVENT SHORTING OF TRANSISTORS Q4, Q6 & Q8
6. ADD SLEEVING (ITEM 91) ON LEADS OF RESISTOR R85, R86, R87 & CAP. C96, C97
7. DRILL HOLE (USING NO. 53 DRILL) IN APPROXIMATE AREA SHOWN FOR CAPACITOR C94. (CAUTION MUST BE TAKEN WHEN DRILLING HOLE 50 AS NOT TO CUT ETCH ON OPPOSITE SIDE OF BOARD)
8. ATTACH WIRES (ITEM 100) TO P.C. BOARD USING GLUE (ITEM 102) IN APPROXIMATE AREAS MARKED (O).
9. ON ASSEMBLED BOARDS, CHANGE LOCATION OF CAP. C64 AND ADD CAP. C50 AS SHOWN.

(SEE SH 2 FOR P/L VARIATIONS)

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 8 LYBRANDS ROAD, WEST NEWTON, MASS. 02165

This document is the property of INCOTERM CORPORATION and is considered confidential. It is not to be disclosed, reproduced in whole or in part, or used for manufacture for or give under when INCOTERM Corp. deals with out its written consent, and that no right is granted to disclose or issue any information or item part of this document. This restriction does not limit the right to use information obtained from another source.

DRAWN	J MacKenzie	2-7-74
CHECKED	[illegible]	[illegible]
ENGR APPR	[illegible]	[illegible]
MFG APPR	[illegible]	[illegible]

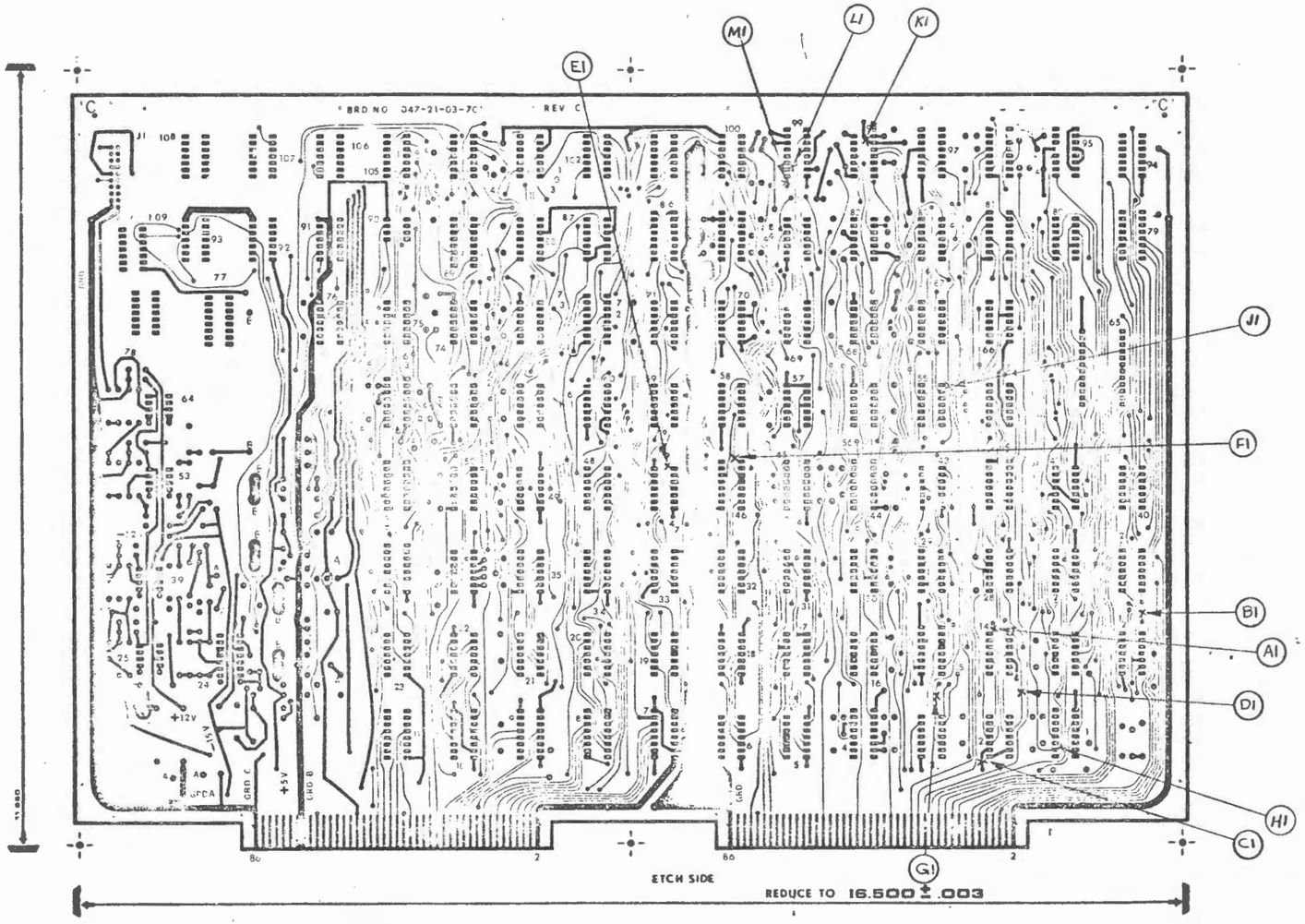
P.C. BOARD ASSY
CASSETTE CONTROLLER
701C

SIZE D | DOCUMENT NUMBER 047-21-02 | REV MZ

NEXT ASSY USED ON 010-10-00

SCALE ~ | SHT 1 OF 5

CUT	ETCH FROM
A1	M14-4 TO EYELET
B1	M26-11 TO EYELET
C1	M2-2 TO EYELET
D1	M2-10 TO M14-8
E1	M47-11 TO EYELET
F1	M58-3 TO M46-11
G1	M3-11 TO EYELET
H1	M1-1 TO M27-3
J1	M55-10 TO EYELET
K1	M98-9 TO EYELET
L1	M99-3 TO EYELET
M1	M99-1 TO EYELET



ETCH SIDE

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMELY QUANTITIES						
107	NH 632-KEP	NUT, HEX #6-32 LOCKING KEP	0						
106	MS35206-227	SCREW FAN HD 6-32 X 5/16 LG	0						
102	MC GLUE	HOT MELT GLUE (THERMOGRIP)	.2oz						
100	945-02-02-001	WIRE #24GA SOLID WHITE	8 FT						
92	EC-3	TAPE INSULATED 3M #3	.5FT						
91	ECPVC105-15	SLEEVING CLR. .059 OD. (ALPHA)	1 FT						
31	ICSN74166N	16 PIN IC (B31)	0						
20	ICSN7486N	14 PIN IC (A16)	2						
18	ICSN7474N	14 PIN IC (A15)	6						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document - the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN J.M. DATE 7-8-74
CHECKED DATE 7-8-74
ENG MFG DATE 7-8-74
APPD DATE 7/11/74
FIRST USED ON 047-21-03-7C

P.C. BOARD ASSY
CLUSTER CASSETTE LOADER 701C

SIZE	DOCUMENT NUMBER	REV
D	047-21-02	M2

SCALE FULL SHT 2 OF 5

ITEM NO.	REFERENCE DESIGNATION
75	CR 6
74	CR 5,7
73	C[illegible]5
72	[illegible]
71	R 67,71
70	CR [illegible]9,13,14
69	CR 3
68	CR 12,4,11,15,16,22,23,24
67	R17-20,48,49,84
66	R61
65	
64	R 47,10
63	R 37
62	
61	R 12,15
60	R 64,82
59	R 81
58	R 3,50
57	
56	R[illegible]5,69
55	R13,27
54	R57
53	
52	
51	
50	R 80
49	R 77,78
48	R 51,53,59,62,73
47	
46	R 36
45	R 9,14,31
44	
43	R 4,6,8,16,23,24,28,29,32, 33,35,[illegible]0,66,69,70,72, [illegible]3,95,46,87
42	R 5,22,2[illegible]30,34,42,43,76
41	R 25,40,41
40	R 2
39	R 1
38	R 11
37	R 7,38,39
36	Q 68
35	Q 5,7
34	Q 4
33	Q 2,3
32	Q 9,10
31	M 77
30	M 90
29	M 25,39,53,64
28	M 24
27	M 9,11
26	M 7,8
25	M 10
24	M 65
23	M 1,4,44,63,85,96,99
22	M 5,21,36
21	M 61
20	M 22,35,78
19	M 15,37,42,45,46,51,91,72, 86,89,95,97
18	M 3,30,73,82,92,101,52
17	M 79
16	M 18,34,48,55,105
15	M 6,12,23,50,69,70,100,109
14	M 76
13	M 2,43,59
12	M 20,49,54,66,68, ,106
11	M 28,58,67,74
10	M 13,17,19,33,40,47,57,62, 71,80,33,107,108
9	M 14,16,26,29,31,32,41,56, 60,84,91,93,94
8	M 27,75,104,98
7	M 87,88,102,103
6	
5	
4	
3	
2	
1	

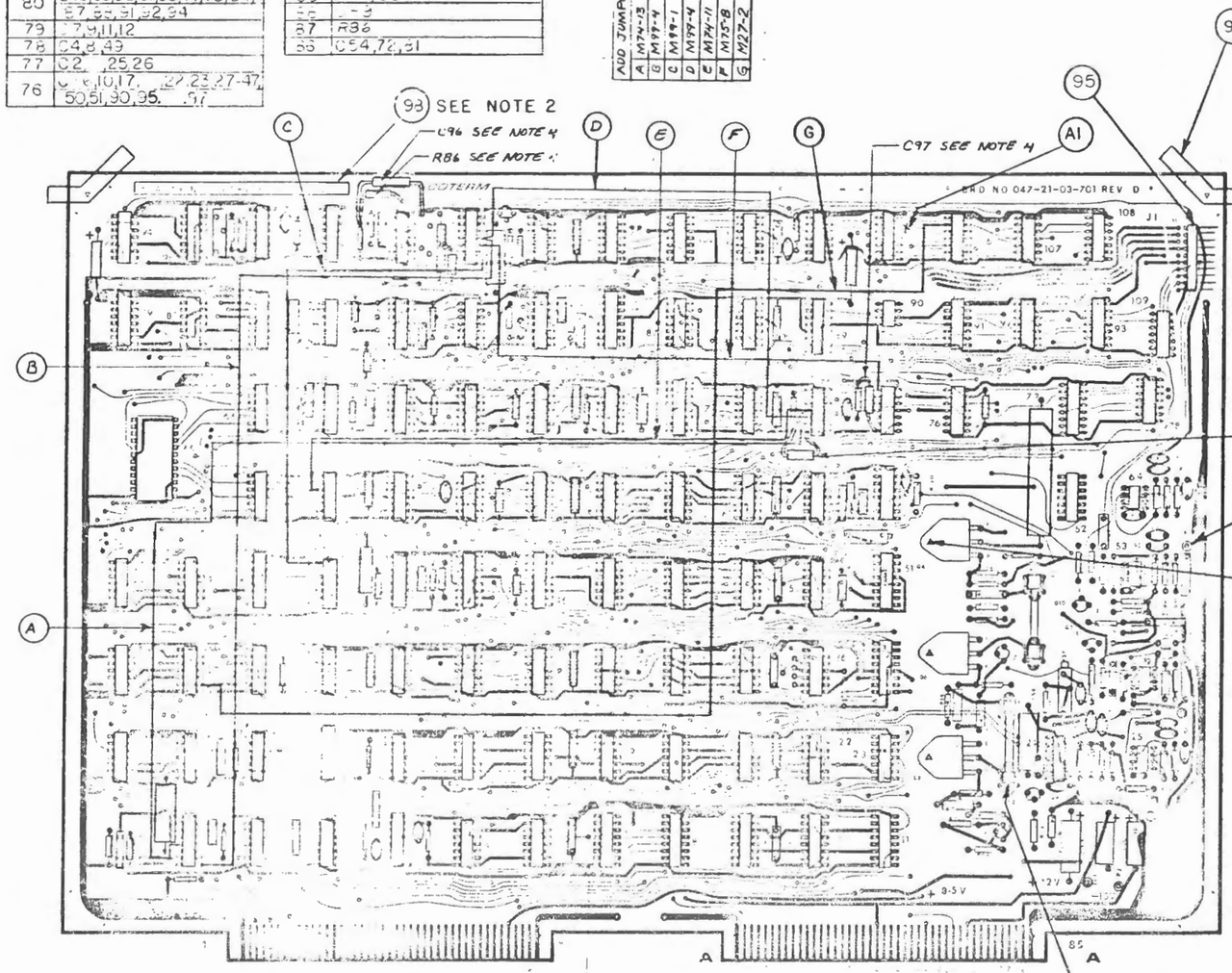
85	C 57,60,83
84	C 53,56,62,64
83	[illegible]
82	C 24
81	C [illegible],21
80	C 16,55,58,61,63,71,75,84, 87,88,91,92,94
79	C 7,9,11,12
78	C 4,8,49
77	C 2, 25,26
76	C [illegible]10,17, 27,23,27-47, 50,51,90,95, 97

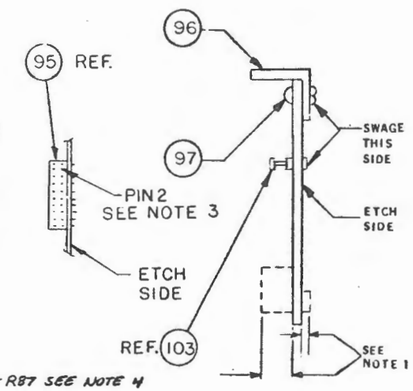
108	C 96
94	C 52
83	C 77,80
86	[illegible]
87	R 86
88	C 54,72,81

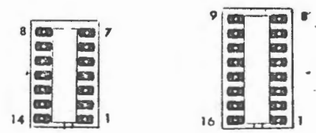
ADD JUMPER WIRE FROM

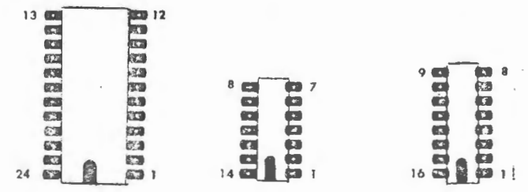
A	M14-13 TO M1-15
B	M99-4 TO M1-1
C	M16-1 TO M13-8
D	M99-4 TO M14-12
E	M14-11 TO M15-10
F	M15-8 TO M99-3
G	M27-2 TO M106-9

CUT ETCH FROM	
A1	M106-9 AT M106-9









PIN NUMBERING AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM AND MARK ASSY NO. 047-21-02-701 AND LATEST ASSY REVISION.
3. CUT PIN 2 OF ITEM 95 FLUSH TO PIN HOUSING, AS SHOWN.
4. ADD SLEEVING (ITEM 91) ON LEADS OF RESITORS 86 & 87 AND CAP 96 & 97

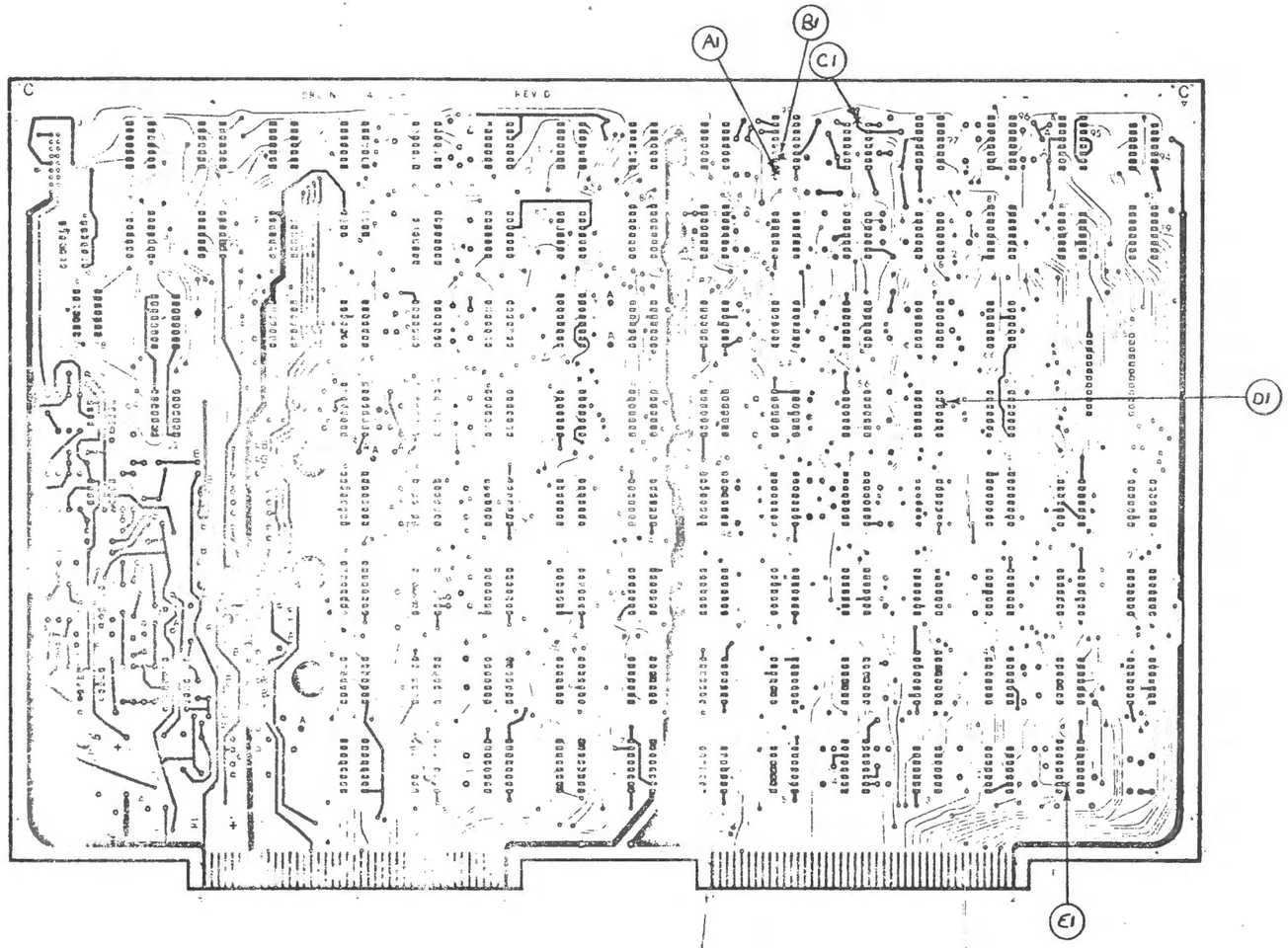
ITEM NO.	PART/ASSY NO	DESCRIPTION	701
110	MS35338-40	WASHER LOCK # 4	0
109	MS27183-4	WASHER FLAT # 4	0
107	MS35649-244	NUT HEX # 4-40	0
106	MS35206-217	SCREW PAN HD # 4-40 X 1/2 LG	0
102	MC GLUE	HOT MELT GLUE (THERMOGRIP)	.1 oz
100	945-02-02-001	WIRE # 24 GA SOLID WHITE	3 FT
~~91~~	~~ECPVC105-15~~	~~SLEEVING ELK .059 OD ALPHA~~	~~.1 FT~~
12	ICSN7404N	14 PIN IC (A03)	6
2	047-21-03-701	ARTWORK ASSY REV D	1

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-21-03-701 REV D

			701D
R.C. COOKE	6/15/84	P.C. BOARD ASSY CASSETTE CONTROLLER	
Carl Busch	6/24/84	047-21-02	M2
			3 OF 5

A1	M99-1 TO EYELET
B1	M99-3 TO EYELET
C1	M98-9 TO EYELET
D1	M55-10 TO EYELET
E1	M1-1 TO M27-3



ETCH SIDE

ASSEMBLE WITH ARTWORK 047-21-03-X1 REV D

INCOTERM CORPORATION

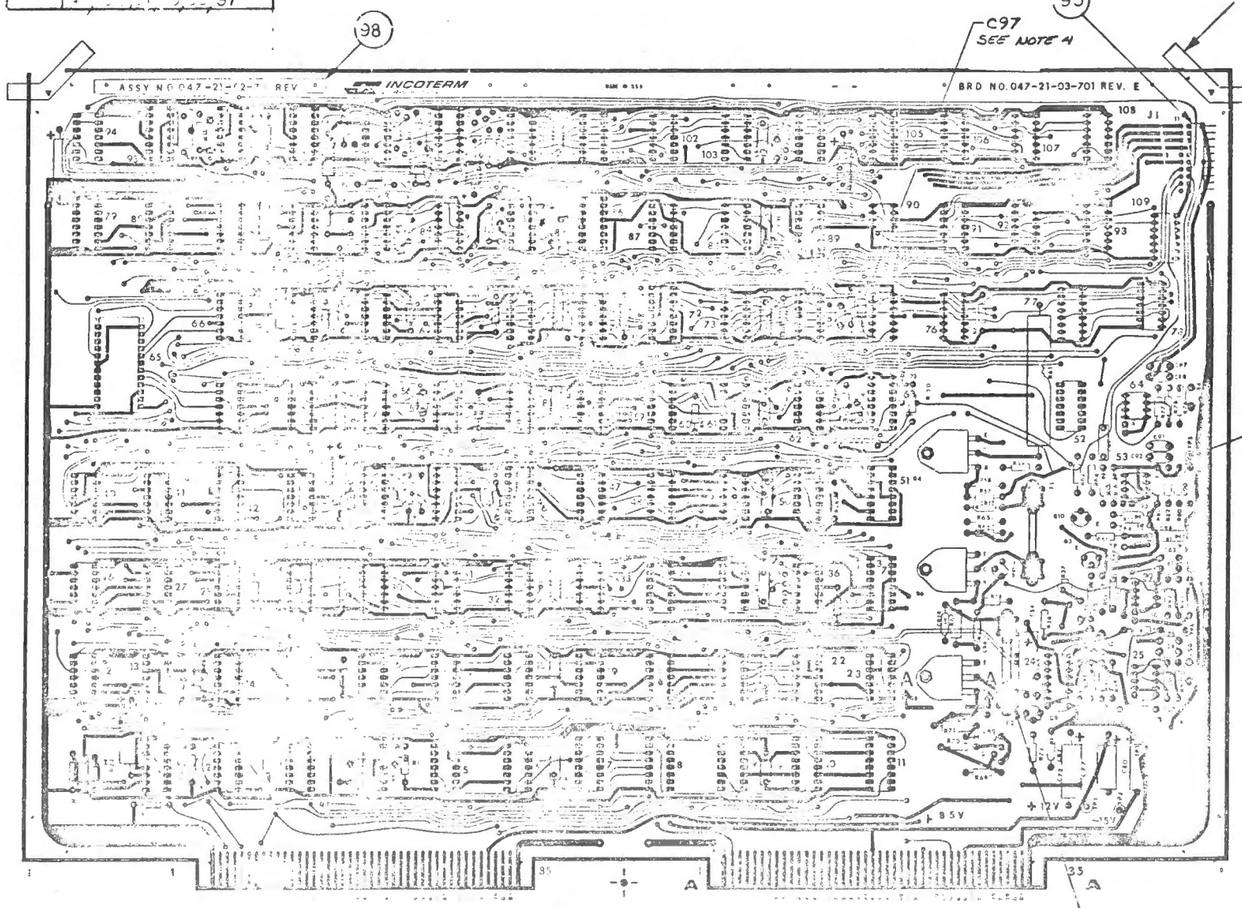
PC. BRD. ASSY.
CLUSTER CASSETTE
LOADER – 701D

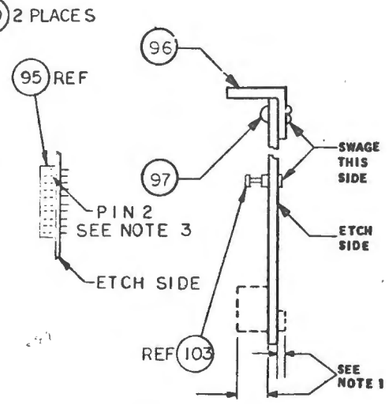
D 047-21-02 M2

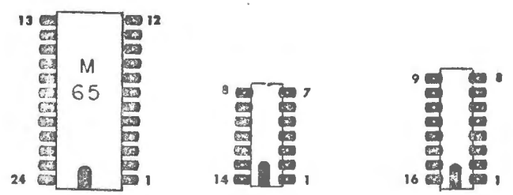
ITEM NO.	REFERENCE DESIGNATION
75	CR6
74	CR 5,7
73	CR5
72	
71	R67,71
70	CR 8,9,13,14
69	CR3
68	CR 12,1[illegible]11,15,16,22,23,24
67	R17-20, 42, 44, 47
66	R61
65	
64	R10, 47
63	R 37
62	
61	R12,15
60	R[illegible],82
59	R81
58	R3,50
57	
56	R45,69
55	R13,27
54	R57
53	
52	
51	
50	R30
49	R77,78
48	R51,53,59,62,73
47	
46	R36
45	R9,14,31
43	R4[illegible]16,23,24,28,[illegible]9, 32,[illegible]35,[illegible]6,53,[illegible]0,66,68, 70,72,83,85,87
42	R5,22,26,30,34,42,43,76
41	R25,40,41
40	R2
39	R1
38	R11
37	R7,33,39
36	[illegible]6,8
35	Q5,7
34	Q4
33	Q2,3
32	Q 9,10
31	M77
30	M90
29	M25,39,53,64
28	M24
27	M9, 11
26	M7,8
25	M10
24	M65
23	M1,4,11,63,85,96,99
22	M5,21,35
21	M31
20	M22,35,73
19	M[illegible]6,37,42,45,46,51,72,81 M[illegible]88,95,97
18	M3,30,52,73,82,92,101
17	M79
16	M18,34,48,55,105
15	M[illegible]2,23,50,[illegible]9,70,100,109
14	M76
13	M2,43,59
12	M20,49,54,[illegible]6,63, ,106
11	M28,58,67,74
10	M13,17,[illegible]2,33,40,47,57 [illegible]2,71,80,[illegible]3,102,103,
9	M14,16,26,29,31,32,41,56, [illegible]0,84,91,93,94
8	M27,75,98,104
7	M37,83,102,103
6	
5	
4	
3	
2	
1	

86	C57,60,93
[illegible]	[illegible]5,[illegible]2,64
[illegible]	
82	24
81	13,19,21,
80	[illegible]1,[illegible]5,[illegible]1,[illegible]2,[illegible]7,[illegible]8
[illegible]	[illegible]4,[illegible]7,[illegible]8,[illegible]1,22,54
79	[illegible]7,[illegible]2,11,12
78	C4,8,45
77	[illegible]2,25,26
76	C1,[illegible]5,17,[illegible]2,23,27- [illegible]5,[illegible]1,[illegible]2,[illegible]5,97

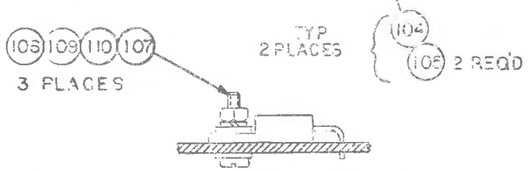
108	C56
34	C52
[illegible]	
89	C77,80
33	C58
87	R86
86	C54,72,31







PIN NUMBERING
AND ORIENTATION



PARTIAL SECTION A-A
SCALE 2/1

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 98
   AND MARK ASSY NO. 047-21-02-701 AND LATEST ASSY REVISION.
3. CUT PIN 2 OF ITEM 95 FLUSH TO PIN HOUSING, AS SHOWN
4. ADD SLEEVING (ITEM 91) ON LEADS OF CAP. 97.

COMPONENT SIDE

ASSEMBLY WITH ARTWORK 047-21-03-701 REV E

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES
			10 [illegible] 50 [illegible] 250 [illegible]

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation, without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND TOLERANCES ARE

DRAWN		
CHECKED	[illegible]	4/1/74
ENG APPD	M.R.S.	4/1/74
MFG APPD	[illegible]	[illegible]
FIRST USED ON		

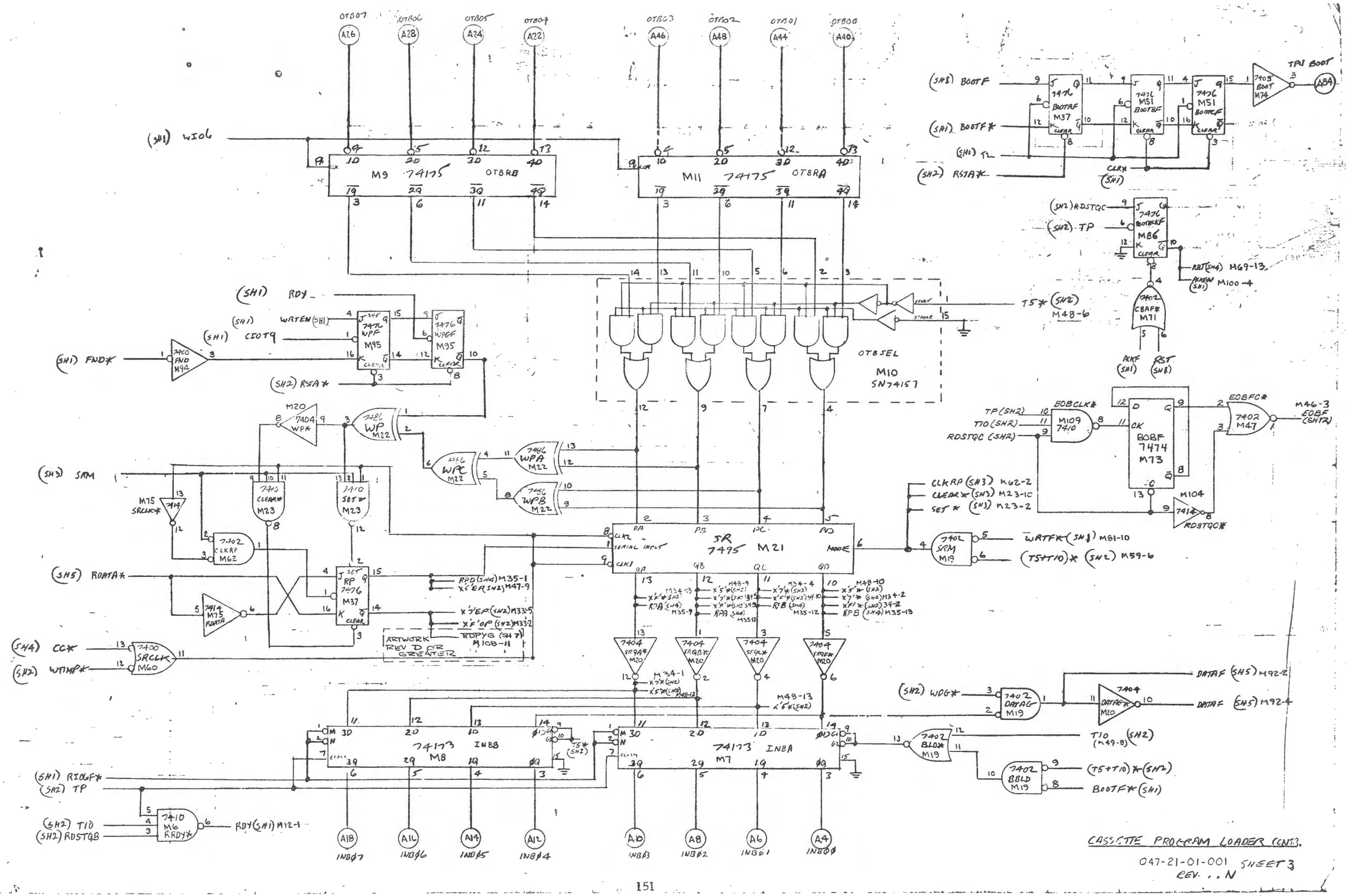
P.C. BOARD ASSY
CASSETTE
CONTROLLER 701

SIZE	DOCUMENT NUMBER	REV
D	047-21-02	M2
SCALE		SHT 5 OF 5

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

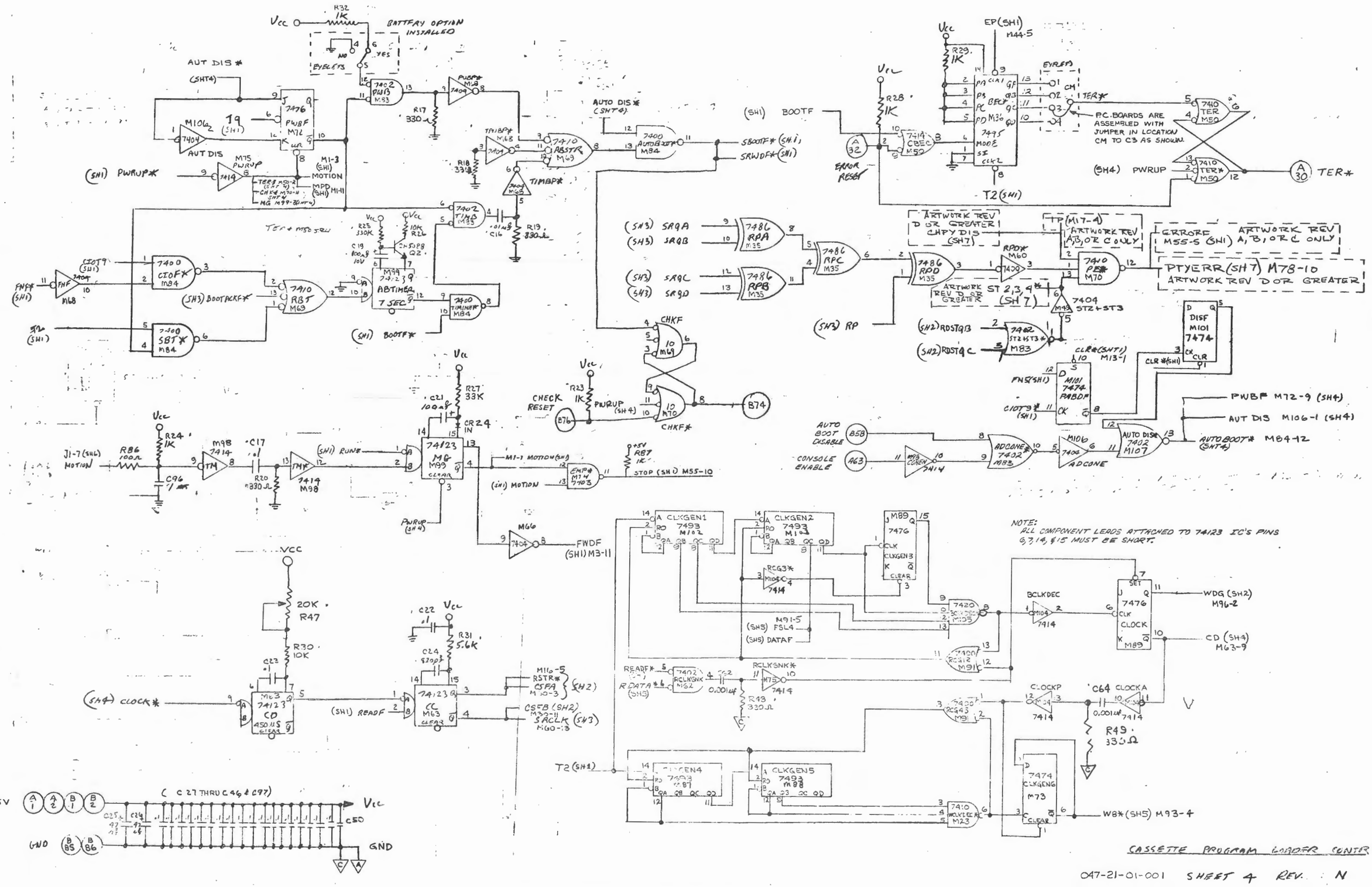
Vcc R10 20K R11 20K C6 .1
7423 WDG M36 850mS
(SH1) WRFF*
(SH4) CLOCK M69-11
DATAG (SH3) M19-3
C7 .022 R12 18K
7423 WTIMR M36 100mS
M74-10 WRDY* (SH1)
SRCLK (SH3) M60-12
(SH5) RDATA*
7474 CSFA M30
7474 CSFB M30
CC* (SH4)
(SH4) CC
7400 CSFF* M16
(SH2) ST0
(SH1) RDOF
7420 RCSC M18
7404 M68
7400 M16 RSTR*
(SH2) ST0*
7400 BCPSTR* M16
C10 .1 R15 18K C12 .022uF
7423 BCPD 100uS M4
C11 .022uF R14 56K
7423 BCP 40mS M4
(SH2) RCSF M18-12
ARTWORK REV D OR GREATER PSRCLK* M109-5 (SH 7)
7402 ST0 M17
M16 ST0* 7400
MR* (SH2) RSTR*
7410 LEDR* M6
(SH2) XSEP
C9 .022 R13 3.5K
7423 RBCTR M85
7490 BCTR M61
7404 M49 BCTRA
BCTRB M49
7420 T5* M48
7400 T10* M60
M59-5 T5+T10* (SH2)
M0 INBB (SH3) OTBSEL (SH3) T5+T10 (SH2)
ARTWORK REV D OR GREATER PTYTME (SH7)
ARTWORK REV A,B, OR C ONLY T5+T10 (SH2)
M49 7404 T10
M74-9 (SH1) WRDY*
RRDY* (SH3)
M56 7400 RDSTQ2*
STOP (SH2)
ARTWORK REV A,B OR C ONLY
M71-3 (SH1) OTBSTF*
(ST2+ST3*) (SH4) M86-9 SH3
BOOTACKF, SH3
ST3TP* (SH2)
BOBCLK
BOBF
RDSTQ2C*
(SH3) BLD* M19-12
BOBCLK M109-11 (SH3)
7402 ST3·ST4 M17
7402 ST1·ST2 M17
SOBF (SH2)
ST1TP* (SH2) M31-13
(ST2+ST3) (SH4) M83-2
RRDY* (SH3) M6-3
ST1TP* (SH2) M31-5
SYNCF (SH2)
SYNCFZ (SH2) M86-3
7495 RDST M5
T9 (SH1)
ST2,3,4* (SH 7)
PTYTMF (SH 7)
LPERRF (SH7)
CHPYDIS (SH 7)
ARTWORK REV "D" OR GREATER
BOBCLK (SH3) M109-10
BOOTACKF (SH3) M86-6
PE* (SH4) ARTWORK REV A,B, OR C ONLY M70-2
INBA (SH3) MT-7
7402 TP M17
7400 ST1TP* M31
7410 SYNC* M100
7420 CLKRDST M18
7476 SYNCF M45
M86 Q 7476 SYNCFZ
7410 CRDST M6
M45-15 READF (SH1)
(SH2) T5*
(SH2) T10*
7428 T5T10* M59
(SH3) SRQD SRQC SRQB SRQA*
7420 X'74 M34
7402 X'74EP M33
ARTWORK REV D OR GREATER RP2K* M95-13 (SH 7)
M19-6 SRM (SH3)
M19-9 BBLD (SH3)
(SH2) RDSTQA
(SH3) RP*
TP* M156-3 (SH7) ARTWORK REV D OR GREATER
7420 X'54 M48
7402 X'54EP M47
LEDA* (SH2) M6-2
(SH3) RP
7402 SE M33
7403 SYNCERR* M58
7404 ST1TP M19
7400 ERRER* M32
M9-7 INBS (SH3)
RRDY* (SH3) M6-5
7400 X'ST1* M33
7408 BOOTERR* M59
BOOTRST* (SH1) M71-13
7420 X'54 M34
7402 X'EP M33
(SH3) RP*
M98 7414 RSTA*
M98 7417 RSTB*
(SH1) RST
BOOTAF (SH3) M37-8
ERRORF
MASKF (SH1)
WPF (SH3) M95-3
WPGF (SH3) M95-8
STOPEF (SH1)
STOPF (SH1)
7400 ST2TP* M31
7402 SOBFCLK M57
7476 SOBF M46
BOOTF (SH1)
7403 SOBERR* M58
7400 SOB* M32
(SH2) RDSTQB
RDSTQ9 (SH2)
7400 ST3TP* M31
7402 EOBFCLK M57
7476 EOBF M46
7400 EOB* M32
(SH2) RDSTQC
EOBFC* M47-1 (SH3)
R16 1K Vcc

CASSETTE PROGRAM LOADER CNTR.
047-21-01-001 SHEET 2
REV. N



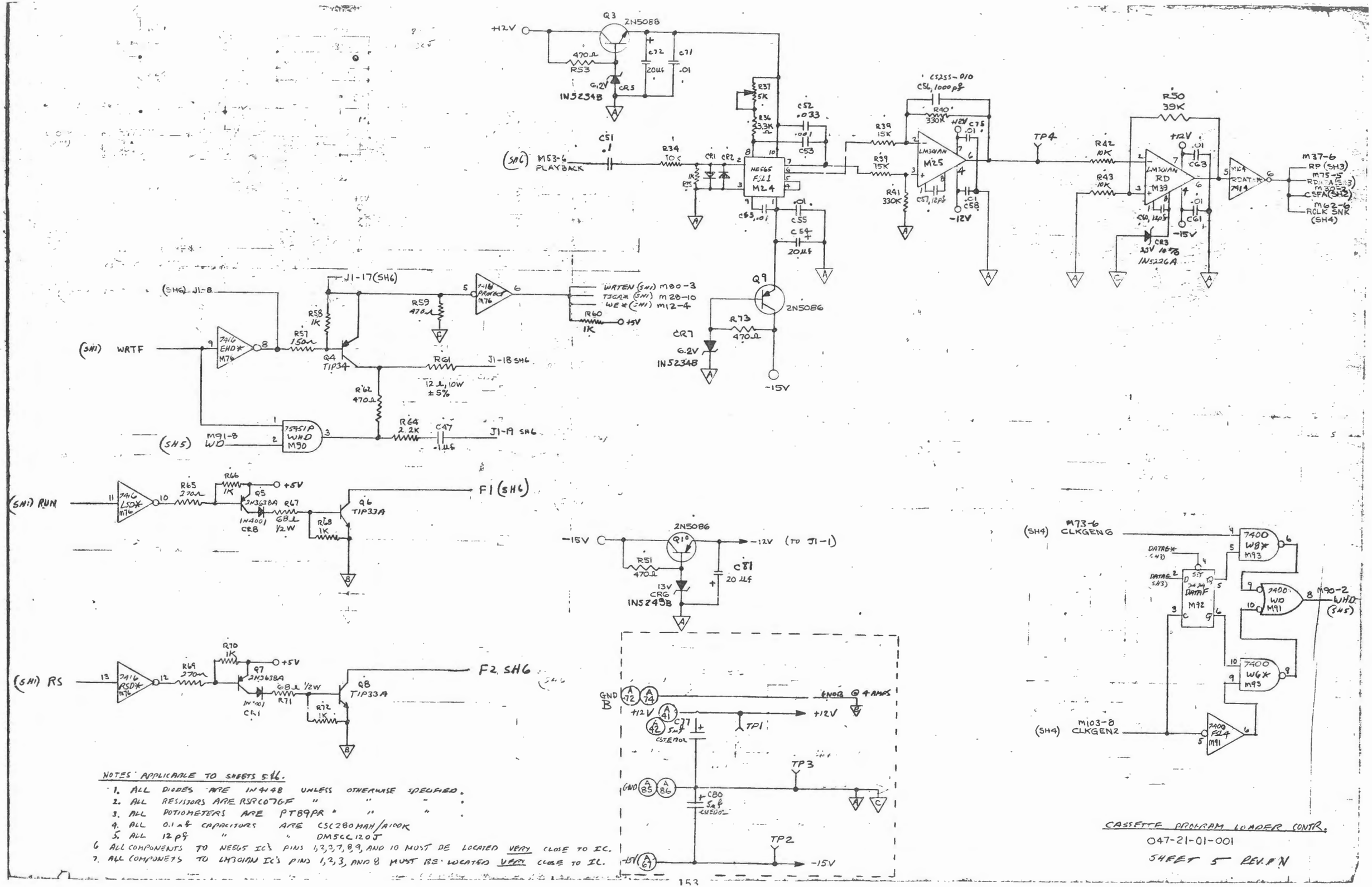
CASSETTE PROGRAM LOADER (CNT.)

047-21-01-001 SHEET 3
REV. . N



CASSETTE PROGRAM LOADER CENTER

047-21-01-001 SHEET 4 REV. N

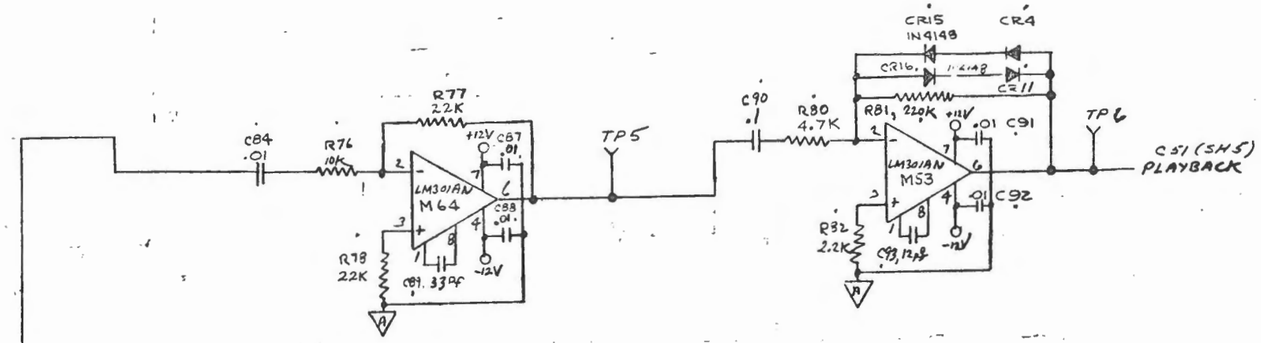


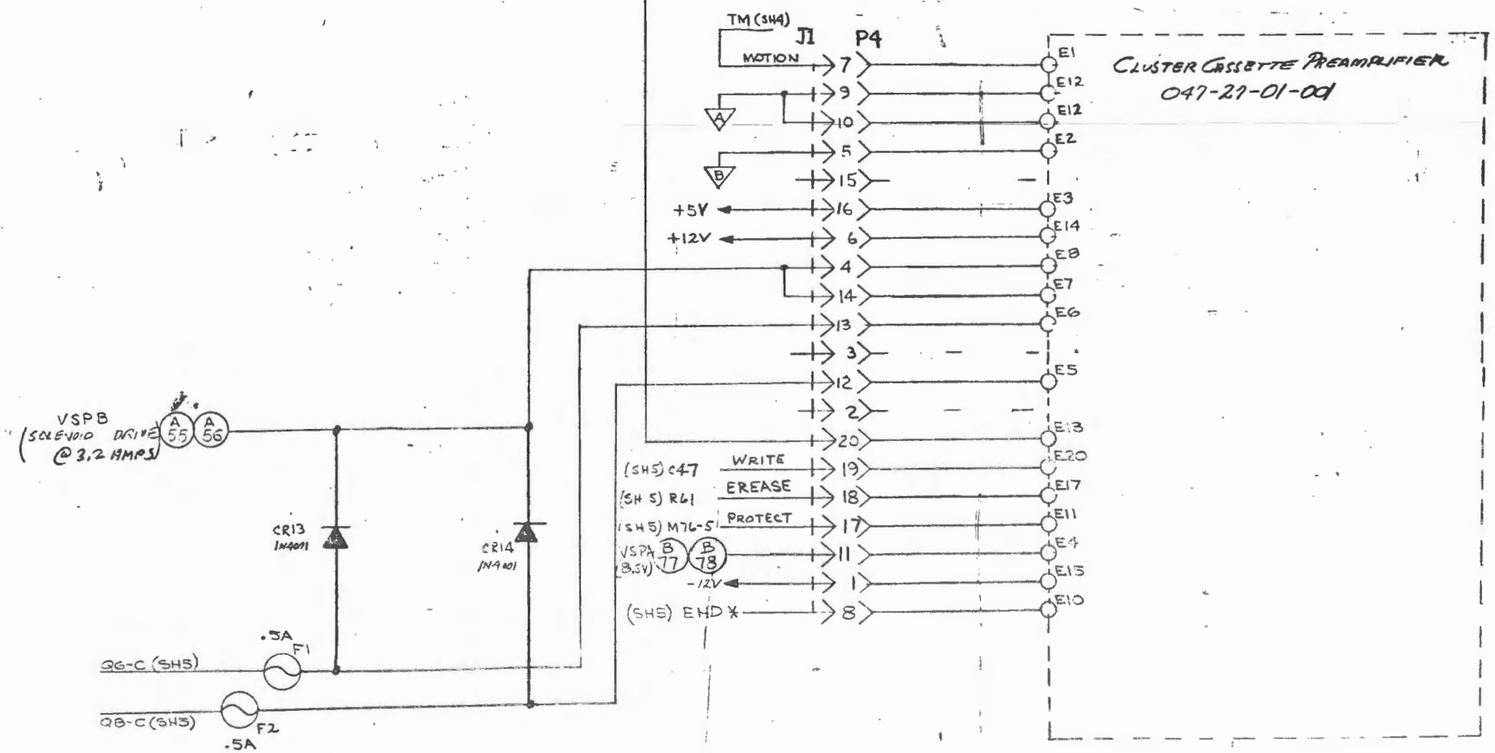
NOTES APPLICABLE TO SHEETS 5 & 6.

1. ALL DIODES ARE IN4148 UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE RSR0703F " " "
3. ALL POTIOMETERS ARE PT89PR " " "
4. ALL 0.1 µf CAPACITORS ARE CSC280MAH/A100K
5. ALL 12 pf " " DM5CC120J
6. ALL COMPONENTS TO NE565 IC'S PINS 1,2,3,7,8,9, AND 10 MUST BE LOCATED VERY CLOSE TO IC.
7. ALL COMPONETS TO LM301AN IC'S PINS 1,2,3, AND 8 MUST BE LOCATED VERY CLOSE TO IC.

CASSETTE PROGRAM LOADER CONTR.
047-21-01-001
SHEET 5 REV.P N

PLAYBACK AMPLIFIER

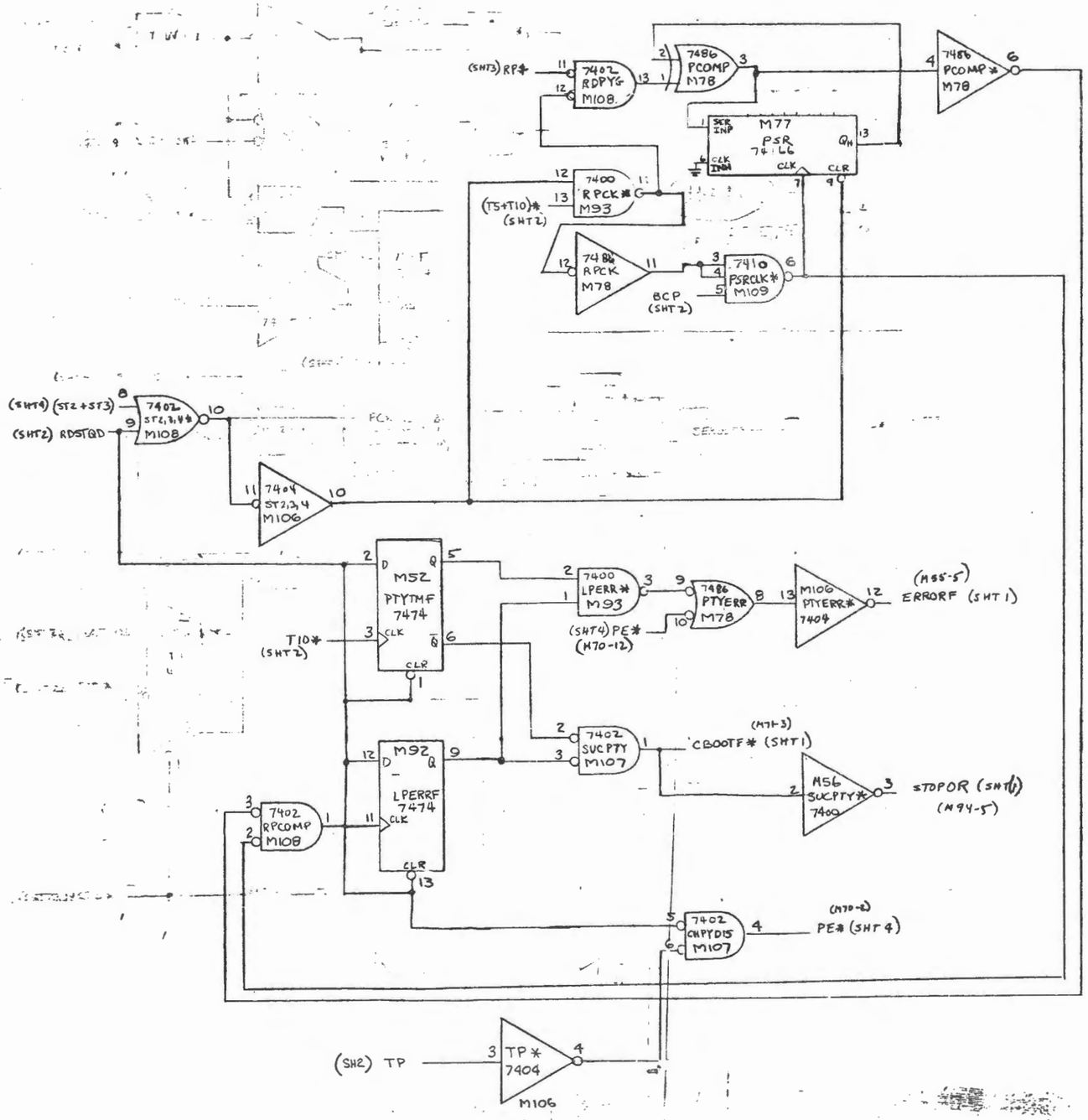




CASSETTE PROGRAM LOADER

047-21-01-001 REV N

SHEET 6

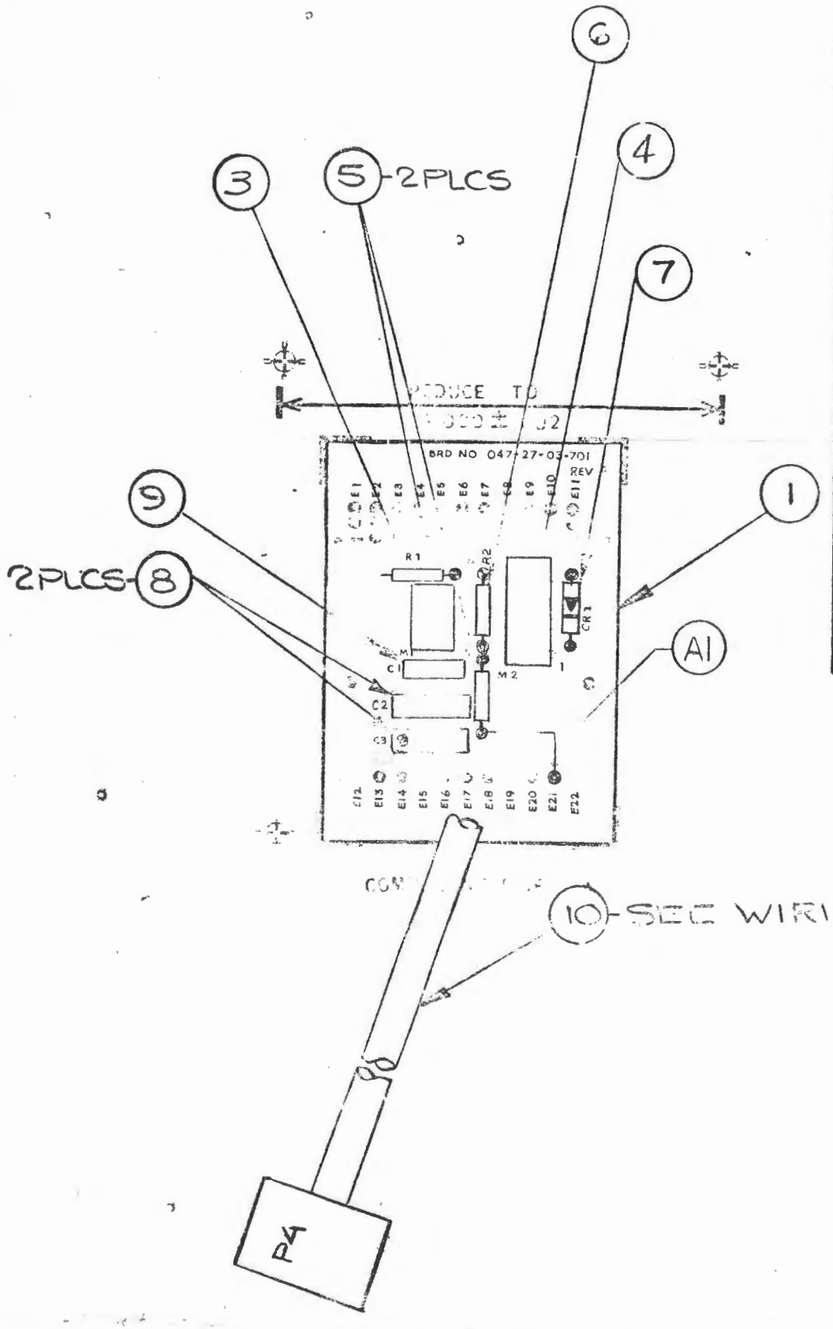


FOR ARTWORK REV 'D' OR GREATER

SHEET 7 OF 7 047-21-01 REV

CASSETTE PROGRAM CONSOLE CONTROL

ADD JUMPER ITEM 3 FROM	
A1	R3 TO E21



WIRING CHART

PIN	FROM	TO	COLOR	DESCRIPTION
1	P1-1	E15	RED	-15V
2	P1-2	—	—	SPARE
3	P1-3	—	—	SPARE
4	P1-4	E1	BLK	RT. SOLENOID
5	P1-5	E2	BLK	TAPE MOTION HOUSING SW.
6	P1-6	E16	WHT	+12V
7	P1-7	E1	WHT	TAPE MOTION HOUSING SW.
8	P1-8	E10	WHT	EHO
9	P1-9	E12	BLK	GND
10	P1-10	E12	BLK	GND
11	P1-11	E4	RED	+8.5V
12	P1-12	E5	BLK	RT. SOLENOID
13	P1-13	E6	BLK	LT. SOLENOID
14	P1-14	E7	BLK	LT. SOLENOID
15	P1-15	—	—	SPARE
16	P1-16	E13	WHT	+5V
17	P1-17	E11	YEL	WRITE PROTECT SW
18	P1-18	E17	WHT	ERASE HD
19	P1-19	E20	GRN	RELAY 7
20	P1-20	E19	T-20	MI-6

NOTE:
1. SOLDER CABLE ASSY, ITEM 10, TO P.C. BOARD PER WIRING CHART.

REVISION HISTORY

		DESCRIPTION OF CHANGE	CHK	APP
	1	TO FILE		
	A	RELEASED/ RD# 737J	[illegible]	[illegible]
B		REVISED/ ECO 3036 1/2/74	[illegible]	[illegible]
	B1	REV / ECO # 3219 5-7-74	[illegible]	
C		REVISED/ECO 5942A	[illegible]	

PART, ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
		ASSEMBLY QUANTITIES						

[illegible]
6 STRATHMORE ROAD
ATICK, MASSACHUSETTS 01760

[illegible] part or used [illegible] for anyone other [illegible] TERM C[illegible] with-[illegible] it is consent, nor has no [illegible] use information obtained in said part. The [illegible] does not [illegible] information [illegible] from other source.

DRAWN [illegible] DATE 2/11/73
CHECKED [illegible] DATE
ENG [illegible] DATE
APP [illegible] DATE

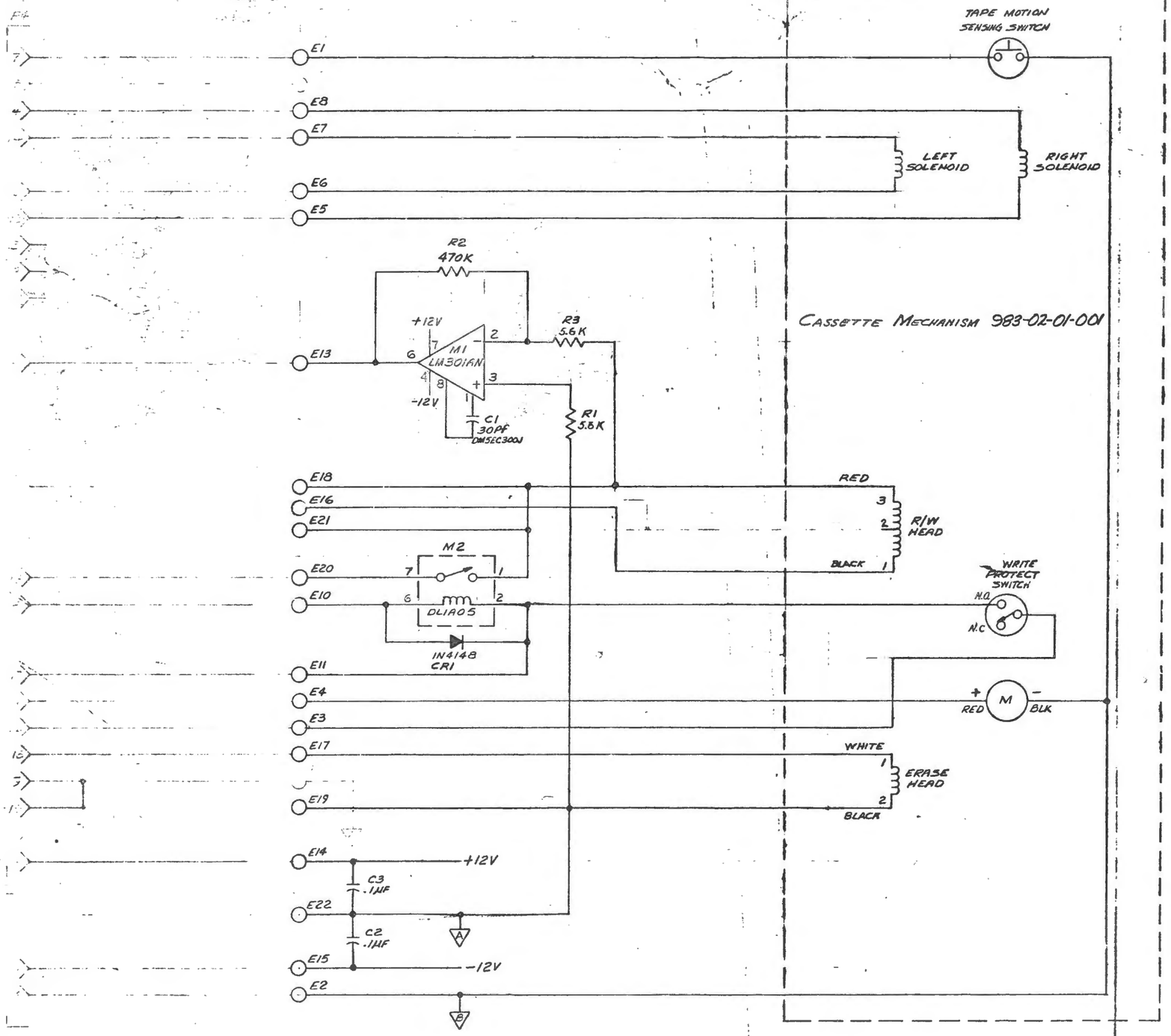
FIRST USED ON 047-10-[illegible]-701

TITLE
CLUSTER CASSETTE PREAMPLIFIER BOARD ASSY 701

SIZE B | DOCUMENT NUMBER 047-27-02 | REV C

SCALE 1/1 | SHT 1 OF 1

REV	DESCRIPTION	DWN	APP
A	RELEASED/RD# 7370	[illegible]	[illegible]
B	REVISED/ECO 3942	[illegible]	[illegible]



CLUSTER CASSETTE PREAMPLIFIER

047-27-01-001 REV B

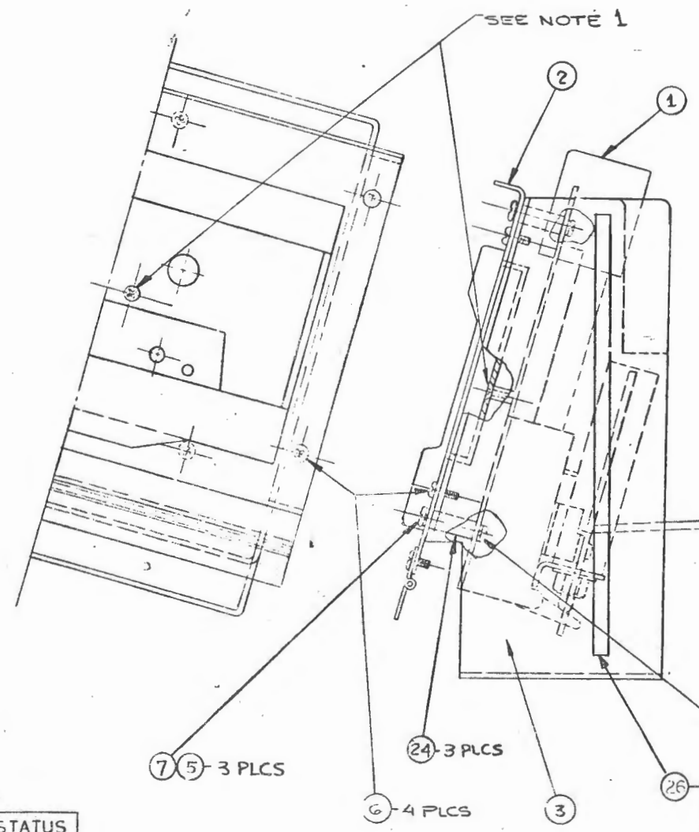
R. Kelly 28 NOV 73

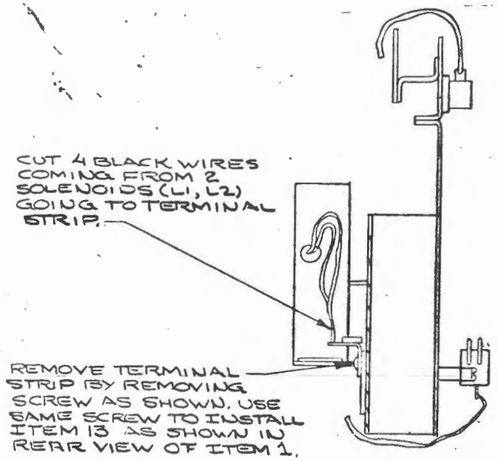
R. Hall 28 NOV 73

REWORK INSTRUCTIONS

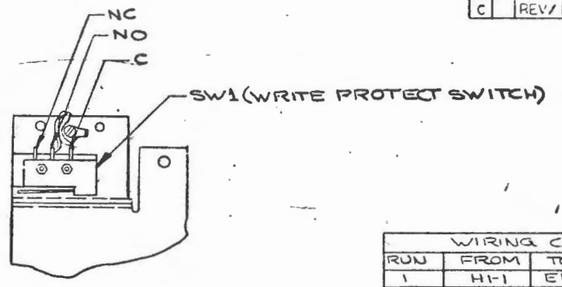
1. REMOVE TWO CONDUCTOR SHIELDED CABLE FROM H2 (READ / WRITE HEAD)
2. ATTACH 3 CONDUCTOR SHIELDED CABLE (BELDEN PART NO. 8643) TO H2 PER WIRING CHART "A" RUN NO. 3 & 5. SOLDIER SHIELD TO GND PLANE ON PC BOARD.
3. ATTACH 30 GA STRANDED WIRE PART NO. 945-01-10-001 (WHT) & 945-01-10-002 (BLK) PER WIRING CHART "A" RUN NO'S 1 & 2.

REVISION HISTORY					
REVISION		DESCRIPTION OF CHANGE		CHK	APPD
	A2	RELEASED / RD # 7375		[illegible]	[illegible]
	A3	REV. CHANGE ONLY / ECO 3021		[illegible]	[illegible]
	B	REV / ECO # 3219	5-8-74	[illegible]	
	B1	REV CHG / ECO 3289	7/9/74	[illegible]	
	B2	REV CHG / ECO 3467	10/2/74	[illegible]	
	B3	REV CHG / ECO 3879	3-3-75	[illegible]	
C		REV / ECO 3942	3/26/75	[illegible]	



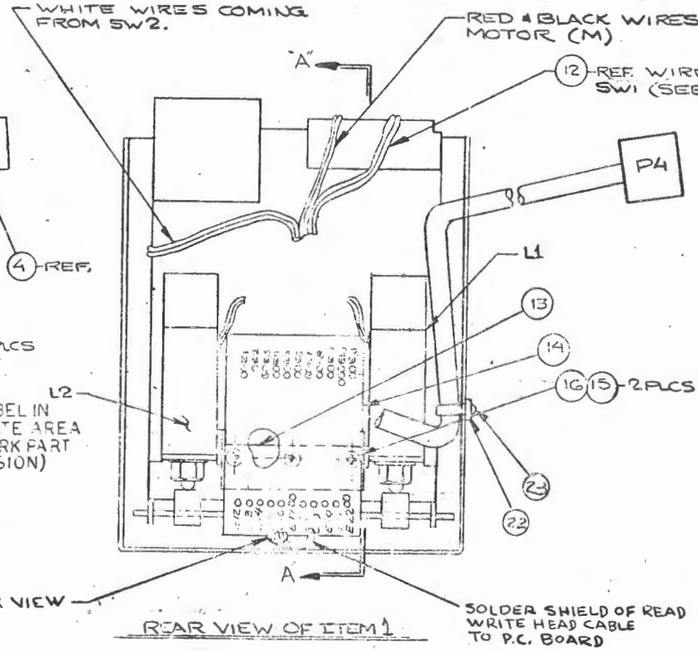


PARTIAL SECTION A-A



PARTIAL REAR VIEW

WIRING CHART A				
RUN	FROM	TO	WIRE COLOR	ITEM NO.
1	H1-1	E17	WHT	8
2	H1-2	E19	BLK	9
3	H2-1	E16	BLK	9
4	H2-2	E21	WHT	10
5	H2-3	E18	RED	11
6	SW1-C	E3	YEL	12
7	SW1-NO	E11	YEL	12
8	L2-BLK	E8	BLK	—
9	L2-BLK	E5	BLK	—
10	L1-BLK	E7	BLK	—
11	L1-BLK	E6	BLK	—
12	SW2-WHT	E1	WHT	—
13	SW2-WHT	E2	WHT	—
14	M1-BLK	E2	BLK	—
15	M1-RED	E4	RED	—



REAR VIEW OF ITEM 1

NOTES:
1. REMOVE SCREW & ESCUTCHEON PRIOR TO ASSEMBLING CASSETTE MECHANISM (ITEM 1) AND ADAPTOR ASSEMBLY (ITEM 2).
2. REINSTALL ESCUTCHEON AS SHOWN.

REWORK INSTRUCTIONS FOR CASSETTE UNITS THAT HAVE NOT BEEN SUPPLIED WITH SHIELDED CABLES ATTACHED TO HEADS.

SUB ASSY REVISION STATUS	
NUMBER	REV
047-27-02-701	C

PART ASSY NO	DESCRIPTION	
		ASSEMBLY

INCOTERM CORPORATION — 6 [illegible] ROAD

TAPE CASSETTE ASSY 701

DOCUMENT NO. 047-10-01 | SIZE D | REV C

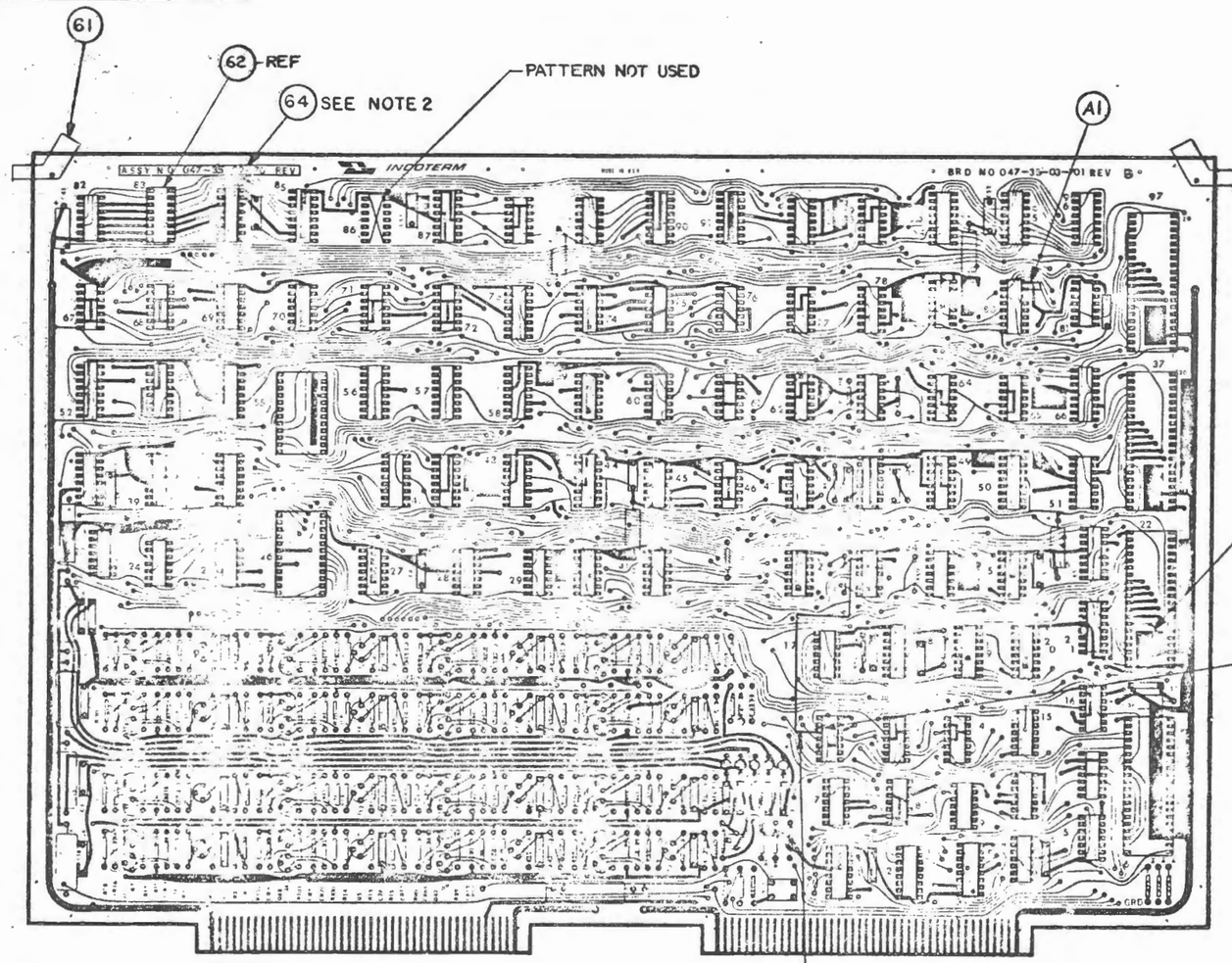
ITEM NO.	REFERENCE DESIGNATION
60	C4,8,12,16,20,
59	C37,11,15,19, 41-45
58	C56
57	C47,48,49,51,52,53,57 37,38,39,40,46,50, 30,31,32,33,34,35,36, C54,55,25,26,27,28,23, C1,2,5,6,9,10,13,14,17,18
56	C22,24,23,21,
54	R10
52	R109
51	R59,103,104,108
50	R12
49	100,101,107, 77,82,83,88,89,94,95, 53,58,64,69,70,71,76, 34,35,40,41,46,47,52, R4,9,16,17,22,23,28,29,
48	R105
47	R106
46	93,99 51,57,63,69,75,81,87, R3,15,21,27,33,39,45,
45	R11
44	R1,2,3
43	102, 60,66,72,78,84,90,96, R5,18,24,30,36,42,48,54
42	92,97,98 74,79,80,85,86,91, 55,56,61,62,67,68,73, 31,32,37,38,43,44,49,50, R7,8,14,19,20,25,26,
39	28,31,34,37,43,46,49,40 Q2,7,10,13,16,19,22,25
38	41,42,44,45,47,48,21,4 30,32,33,35,36,38,39,8 Q20,21,23,24,26,27,29, Q3,5,6,9,11,12,14,15,17,18,
37	CR1-7 CR11-79
36	CR8,9,10
35	M6,22,37,97
34	M3,91
33	M19,20,84,85
32	M38,40,42,54,90
31	M26
30	M80,94,95,96
29	M55
28	M8
27	M13,48
26	M63,64
25	53,56,57,58,73,87 M39,41,43,44,49,50,52,
24	M21,36,51,66
23	M32,45,62,77,92,93,81,79
22	M35
21	M60
20	M1,2
19	M16
18	M82
17	M15
16	M69,70,59
15	M24,27,29
14	78,65 M10,33,61,67,68,71,72,76
13	M28,25,23
12	M4,5,9,11,34,89
11	M12
10	M7,13,14,30,47,75,88
9	M74,46,17
8	M31
7	
6	
5	
4	
3	
2	
1	

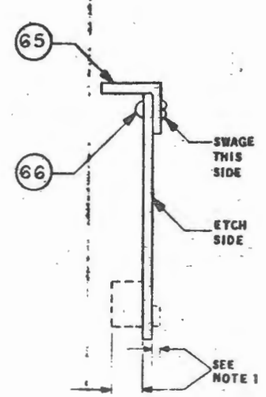
67	
66	
65	
64	
63	M6,22,37,97
62	STB83
61	

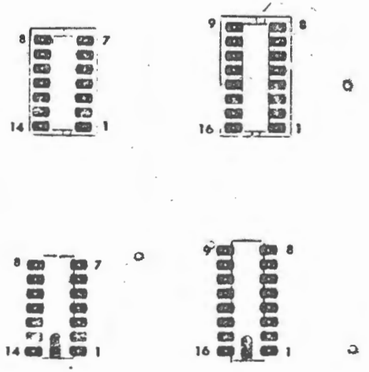
ADD JUMPER WIRE (ITEM 70) FROM	
A1	M80-7 TO M80-8
B1	M12-10 TO M33-9

CUT ETCH FROM	
A	M12-9 TO M12-10

REVISION HISTORY				
		DESCRIPTION	CHK	APP
A		RELEASED RD# 855		
	A1	REV CHG ONLY/ECO 3313	7/21/74	
B		REVISED/ECO 3362	8/29/74	
	B1	REV/ECO 3344	9-10-74	
C		REV/ECO 3823	8-18-75	







PIN NUMBERING
AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .500 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 64
   AND MARK ASSY NO. 047-35-02-701 AND LATEST ASSY REVISION.
3. INSTALL SOCKET ITEM 63 IN THE FOLLOWING LOCATIONS: 6,22,37,97

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-35-03-701 REV B

PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION

TIM SHILBERG	5/17/74	P.C. BOARD ASSY PROGRAMABLE BAUD RATE MPC -701
		D 047-35-02 C

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
A	RELEASED RD# 855W14	[illegible]	[illegible]
B	REVISED/ECO 3362 9/3/74	[illegible]	[illegible]
C	REV/ECO 3873 2-18-75	[illegible]	[illegible]

INTSELINH
INTSELIN A34
M17 7400
6 INT(SH1)M32-3

RDYINBO3(SH2)M8-1
RDYINBO2(SH2)M8-4
RDYINBO1(SH2)M8-13
RDYINBO0(SH2)M8-10

WIOOH
M7 7402
M46-5
LDGRP0L(SH4)
LDGRP1L(SH6)M46-2
LDGRP2L(SH8)M46-13
LDGRP3L(SH10)M46-10

GRPSELOH (SH2)
UARTBSYO (SH5)
GRPSEL1H (SH2)
UARTBSY1 (SH7)
GRPSEL2H (SH2)
UARTBSY2 (SH9)
GRPSEL3H (SH2)
UARTBSY3 (SH11)
M60 7454
PRDYSELEN

PRDY00L (SH5)
PRDY01L (SH5)
PRDY02L (SH5)
PRDY03L (SH5)
PRDY04L (SH7)
PRDY05L (SH7)
PRDY06L (SH7)
PRDY07L (SH7)
PRDY08L (SH9)
PRDY09L (SH9)
PRDY10L (SH9)
PRDY11L (SH9)
PRDY12L (SH11)
PRDY13L (SH11)
PRDY14L (SH11)
PRDY15L (SH11)
M55 74150 PRDY SEL
E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15
ENABLE A B C D
SELECT00H(SH11)
SELECT01H (SH11)
SELECT02H (SH11)
SELECT03H (SH11)

PRDY
M33 7408

+5V
R106 220

TI01ACK
M12 7403
TI01H (SH11)

TI00ACK
M12 7403
TI00H (SH11)

TI02ACK
M12 7403
TI02H (SH11)

TYP00 A28
TYP01 A30
ADDXX A32
M1 7442 INSDEC
R105 1K
+5V

CI06H (SH2)M14-5

TI00H
M13 7402
TI00ACK (SH11)M12-9,10

GRPSEL (SH2)M90-1
TI01ACK (SH11)M12-4
TI01T13(SH2)M17-12
M34 7404
TI01L

TI02H
M13 7402
TI02ACK(SH11)M12-1
MSKGRP0(SH2)M87-16
MSKGRP1(SH2)M87-12
DCODE2H
MSKGRP2(SH2)M73-16
MSKGRP3(SH2)M73-12
M34 7404

RESETLA (SH2)
DCODE1H
M9 7404
M44 7476 MASK
CI06H (SH2)M14-6

DCODE0H
M9 7404
MSKCLK(SH2)M34-13

MSKCK
M14 7402
T13L (SH2)
DCODE3H
M9 7404
MSKGRP0 (SH2)M87-4
MSKGRP1 (SH2)M87-9
MSKGRP2 (SH2)M73-4
MSKGRP3 (SH2)M73-9

CI05H
M13 7402
LDSTBG0(SH4)M61-10
LDSTBG1(SH6)M61-13
LDSTBG2(SH8)M76-1
LDSTBG3(SH10)M76-4

CI04H
M14 7402
LDPRTSEL0(SH4)M33-2
LDPRTSEL1(SH6)M33-5
LDPRTSEL2(SH8)M65-13
LDPRTSEL3(SH10)M65-10

FUNC00 A43
FUNC01 A46
FUNC02 A44
FUNC03 A40
M2 7442 DCODE

RIOH
M29 7414

M17 7400
RIORDY

ACKEN
M31 7410
T09H (SH2)

ACKI
M12 7403
A36 ACK

M32 7474 ACK

FUNGE
M7 7402

RDYGRP0L (SH2)
RDYGRP1L (SH2)
RDYGRP2L (SH2)
RDYGRP3L (SH2)
RDYJH
M59 7420
M44 7476 READY
T02H(SH2)
RSTREADY (SH2)

RIOWIO
M31 7410

T02L (SH2)
M7 7402
A38 INTERRUPT
INTG

INTSELINH (SH1)
INTEN
M30 7402
M32 7474 INT

TI01XX
M26 74154
RSTRDY00(SH5)M68-4
RSTRDY01(SH5)M68-1
RSTRDY02(SH5)M68-9
RSTRDY03(SH4)M68-12
RSTRDY04(SH7)M67-9
RSTRDY05(SH7)M67-12
RSTRDY06(SH7)M67-4
RSTRDY07(SH7)M67-1
RSTRDY08(SH9)M71-4
RSTRDY09(SH9)M71-1
RSTRDY10(SH9)M71-9
RSTRDY11(SH9)M71-12
RSTRDY12(SH11)M72-1
RSTRDY13(SH11)M72-4
RSTRDY14(SH11)M72-12
RSTRDY15(SH11)M72-9
T09L (SH2)
G1 G2 A B C D

OTB00H (SH2)
OTB01H (SH2)
OTB02H (SH2)
OTB03H (SH2)
M3 74175
SELECT
00H 00L 01H 01L 02H 02L 03H 03L
PRDYSELA(SH1)M55-15
PRDYSELB(SH1)M55-14

M10 7408
SELECTCK
RESETLA (SH2)
T13H (SH2)

GRPSELA(SH2)M90-13
PRDYSELC(SH1)M55-13
PRDYSELD(SH1)M55-11
GRPSELB(SH2)M90-3

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
A. ALL RESISTOR VALUES ARE IN OHMS ARE 1/4W, ±5%
B. ALL CAPACITOR VALUES ARE IN MICROFARADS
C. ALL DIODES ARE IN4148
2. THE FOLLOWING I/O PINS ARE PRE ASSIGNED AND MUST BE USED FOR THE FUNCTIONS DESCRIBED
A. +5V — PINS 1, 2
B. GRD — PINS 85, 86
C. +12V — PINS 75, 76
D. -13V — PINS 81, 82
E. I/O BUSS — PINS 3 THRU 37

HIGHEST USED REF DES					
M97	CR79	Q49	R109	C57	
REF DES NOT USED					
M86					

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

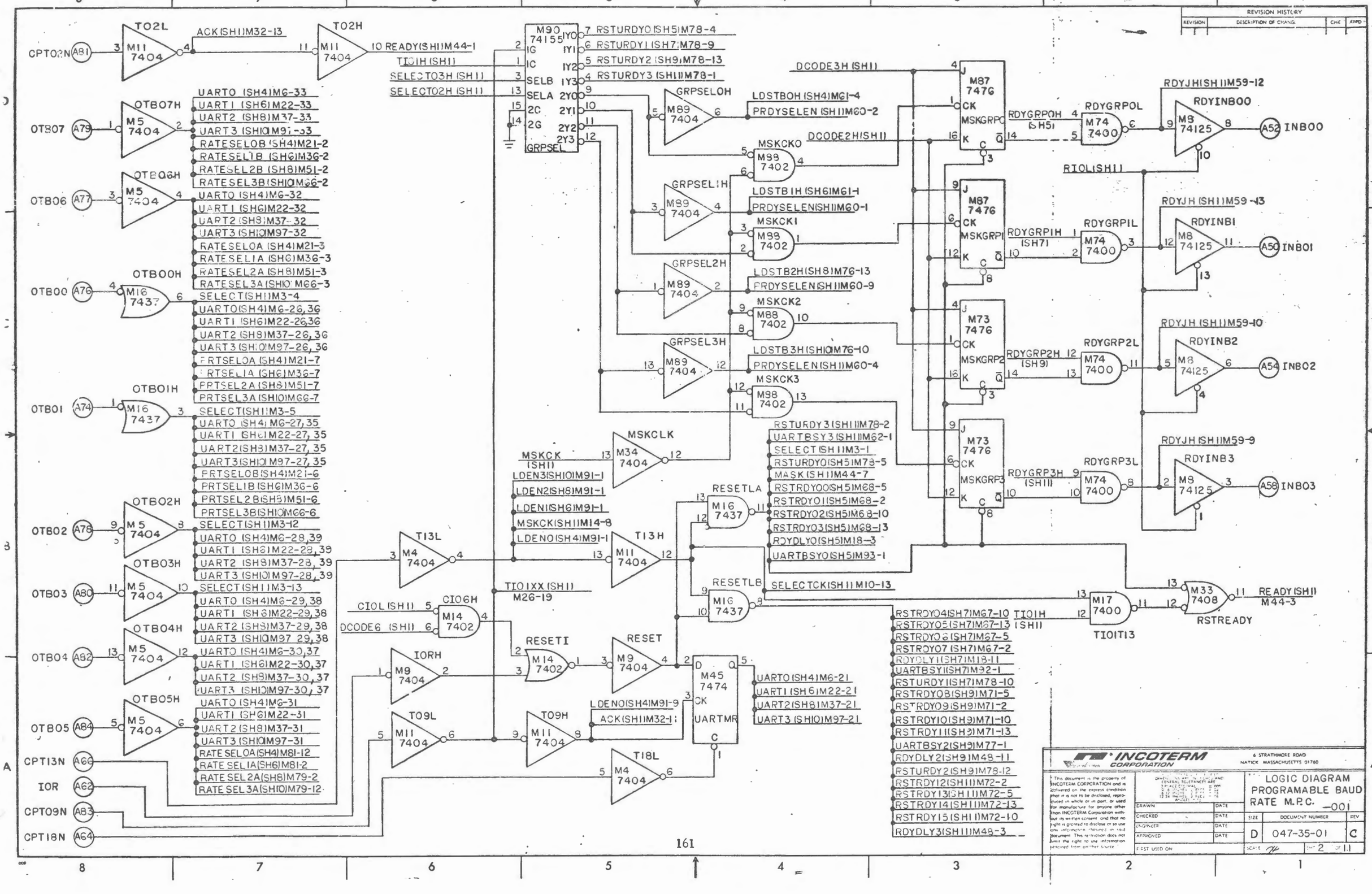
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN [illegible] DATE 8-26-74
CHECKED [illegible] DATE 8-26-74
ENGINEER [illegible] DATE
APPROVED [illegible] DATE 9/6/74
FIRST USED ON

TITLE: LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. -001

SIZE	DOCUMENT NUMBER	REV
D	047-35-01	C

SCALE — SHT 1 OF 11


REVISION HISTORY
REVISION
DESCRIPTION OF CHANGE
CHK
APPD
CPT02N A81
TO2L
M11 7404
ACK(SH1)M32-13
TO2H
M11 7404
10 READY(SH1)M44-1
TI01H (SH1)
SELECT03H (SH1)
SELECT02H (SH1)
M90 74155
GRPSEL
RSTURDY0(SH5)M78-4
RSTURDY1(SH7)M78-9
RSTURDY2(SH9)M78-13
RSTURDY3(SH10)M78-1
GRPSEL0H
M89 7404
LDSTB0H(SH4)M61-4
PRDYSELEN(SH1)M60-2
GRPSEL1H
LDSTB1H(SH6)M61-1
PRDYSELEN(SH1)M60-1
GRPSEL2H
LDSTB2H(SH8)M76-13
PRDYSELEN(SH1)M60-9
GRPSEL3H
LDSTB3H(SH10)M76-10
PRDYSELEN(SH1)M60-4
DCODE3H (SH1)
DCODE2H(SH1)
MSKCK0
MSKCK1
MSKCK2
MSKCK3
M98 7402
M88 7402
M87 7476
M73 7476
MSKGRP0
MSKGRP1
MSKGRP2
MSKGRP3
RDYGRP0H (SH5)
RDYGRP1H (SH7)
RDYGRP2H (SH9)
RDYGRP3H (SH11)
M74 7400
RDYGRP0L
RDYGRP1L
RDYGRP2L
RDYGRP3L
RDYJH(SH1)M59-12
RDYJH(SH1)M59-13
RDYJH(SH1)M59-10
RDYJH(SH1)M59-9
RDYINB00
RDYINB1
RDYINB2
RDYINB3
M8 74125
A52 INB00
A50 INB01
A54 INB02
A58 INB03
RIO1(SH1)
MSKCLK
M34 7404
MSKCK (SH1)
LDEN3(SH10)M91-1
LDEN2(SH8)M91-1
LDEN1(SH6)M91-1
MSKCK(SH1)M14-8
LDEN0(SH4)M91-1
RSTURDY3(SH1)M78-2
UARTBSY3(SH1)M62-1
SELECT(SH1)M3-1
RSTURDY0(SH5)M78-5
MASK(SH1)M44-7
RSTRDY00(SH5)M68-5
RSTRDY01(SH5)M68-2
RSTRDY02(SH5)M68-10
RSTRDY03(SH5)M68-13
RDYDLY0(SH5)M18-3
UARTBSY0(SH5)M93-1
RESETLA
RESETLB
M16 7437
M1G 7437
SELECTCK(SH1)M10-13
RSTRDY04(SH7)M67-10
RSTRDY05(SH7)M67-13
RSTRDY06(SH7)M67-5
RSTRDY07(SH7)M67-2
RDYDLY1(SH7)M18-11
UARTBSY1(SH7)M92-1
RSTURDY1(SH7)M78-10
RSTRDY08(SH9)M71-5
RSTRDY09(SH9)M71-2
RSTRDY10(SH9)M71-10
RSTRDY11(SH9)M71-13
UARTBSY2(SH9)M77-1
RDYDLY2(SH9)M48-11
RSTURDY2(SH9)M78-12
RSTRDY12(SH11)M72-2
RSTRDY13(SH11)M72-5
RSTRDY14(SH11)M72-13
RSTRDY15(SH11)M72-10
RDYDLY3(SH11)M48-3
TI01H (SH11)
M17 7400
M33 7408
READY(SH1) M44-3
RSTREADY
TI01T13
TI3L
M4 7404
TI3H
M11 7404
TI01XX(SH1) M26-19
CI01L(SH1)
DCODE6 (SH1)
CI06H
M14 7402
RESETI
RESET
M9 7404
IORH
M45 7474
UARTMR
UART0(SH4)M6-21
UART1(SH6)M22-21
UART2(SH8)M37-21
UART3(SH10)M97-21
LDEN0(SH4)M91-9
ACK(SH1)M32-1
TO9L
TO9H
TI8L
OTB07 A79
OTB07H
M5 7404
OTB06 A77
OTB06H
OTB00 A76
OTB00H
M16 7437
OTB01 A74
OTB01H
OTB02 A78
OTB02H
OTB03 A80
OTB03H
OTB04 A82
OTB04H
OTB05 A84
OTB05H
UART0 (SH4)M6-33
UART1 (SH6)M22-33
UART2 (SH8)M37-33
UART3 (SH10)M97-33
RATESEL0B (SH4)M21-2
RATESEL1B (SH6)M36-2
RATESEL2B (SH8)M51-2
RATESEL3B(SH10)M66-2
UART0 (SH4)M6-32
UART1 (SH6)M22-32
UART2 (SH8)M37-32
UART3 (SH10)M97-32
RATESEL0A (SH4)M21-3
RATESEL1A (SH6)M36-3
RATESEL2A (SH8)M51-3
RATESEL3A(SH10)M66-3
SELECT(SH1)M3-4
UART0(SH4)M6-26,36
UART1 (SH6)M22-26,36
UART2 (SH8)M37-26,36
UART3 (SH10)M97-26,36
PRTSEL0A (SH4)M21-7
PRTSEL1A (SH6)M36-7
PRTSEL2A (SH8)M51-7
PRTSEL3A(SH10)M66-7
SELECT(SH1)M3-5
UART0 (SH4)M6-27,35
UART1 (SH6)M22-27,35
UART2(SH8)M37-27,35
UART3(SH10)M97-27,35
PRTSEL0B(SH4)M21-6
PRTSEL1B(SH6)M36-6
PRTSEL2B(SH8)M51-6
PRTSEL3B(SH10)M66-6
SELECT(SH1)M3-12
UART0 (SH4)M6-28,39
UART1 (SH6)M22-28,39
UART2 (SH8)M37-28,39
UART3 (SH10)M97-28,39
SELECT(SH1)M3-13
UART0 (SH4)M6-29,38
UART1 (SH6)M22-29,38
UART2 (SH8)M37-29,38
UART3 (SH10)M97 29,38
UART0 (SH4)M6-30,37
UART1 (SH6)M22-30,37
UART2 (SH8)M37-30,37
UART3 (SH10)M97-30,37
UART0 (SH4)M6-31
UART1 (SH6)M22-31
UART2 (SH8)M37-31
UART3 (SH10)M97-31
RATE SEL0A(SH4)M81-12
RATE SEL1A(SH6)M81-2
RATE SEL 2A(SH8)M79-2
RATE SEL 3A(SH10)M79-12
CPT13N A66
IOR A62
CPT09N A83
CPT18N A64
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.
DRAWN
CHECKED
ENGINEER
APPROVED
DATE
FIRST USED ON
LOGIC DIAGRAM
PROGRAMABLE BAUD
RATE M.P.C. -001
SIZE
DOCUMENT NUMBER
REV
D
047-35-01
C
SCALE NONE
SHT 2 OF 11

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

12.6MHZ (A72) → M4 7404 (12.6 MHZ) → 74163 M20 (CNTRA) → DECO, M15 7425 → DEC40, M10 7408 → DEC40L, M17 7400 → M19 (CNTRB 74163) → M4 7404 (12.6 MHZI)

M20 → M35 J3 7472 (19.2KFF) → M34 7404 (19.2K)

M63 7493 (CNTRC) → (9600 BAUD)

M64 7493 (CNTRD) → (300 BAUD), (150 BAUD), (75 BAUD)

M34 → (19200 BAUD)

M49 7476 (50 BAUDA) → M49 7476 (50 BAUDB) → M50 7476 (50 BAUDC)

M85 74163 (CNTRE) → STB M83

M84 74163 (CNTRF)

M82 7430 (BAUDSELL) → M34 7404 (BAUDSELH) → M50 7476 (BAUDOPT) → (X BAUD)

RATEMUX0(SH4)M80-14
RATEMUX1(SH6)M96-14
RATEMUX2(SH8)M95-14
RATEMUX3(SH10)M94-14
RATEMUX0(SH4)M80-1
RATEMUX1(SH6)M96-1
RATEMUX2(SH8)M95-1
RATEMUX3(SH10)M94-1
RATEMUX0(SH4)M80-2
RATEMUX1(SH6)M96-2
RATEMUX2(SH8)M95-2
RATEMUX3(SH10)M94-2
RATEMUX0(SH4)M80-3
RATEMUX1(SH6)M96-3
RATEMUX2(SH8)M95-3
RATEMUX3(SH10)M94-3
RATEMUX0(SH4)M80-13
RATEMUX1(SH6)M96-13
RATEMUX2(SH8)M95-13
RATEMUX3(SH10)M94-13
(50 BAUD) RATEMUX0(SH4)M80-4
RATEMUX1(SH6)M96-4
RATEMUX2(SH8)M95-4
RATEMUX3(SH10)M94-4
RATEMUX0(SH4)M80-15
RATEMUX1(SH6)M96-15
RATEMUX2(SH9)M95-15
RATEMUX3(SH10)M94-15

+5V: A1, A2, B1, B2 — GND: A85, A86, B85, B86

C41–C55 (25 12V; .1) → +5V; C56 5 25, C57 .1

UART0(SH4)M6-2
UART1(SH6)M22-2
UART2(SH8)M37-2
UART3(SH10)M97-2

VGG → CR79, CR78, CR77 → A69 (-13V), A70

+5V → R11 390 → CR3 → V2; CR1, CR2 → R10 100 → Q1 2N3638A → R1 91 2W, R2 91 2W, R3 91 2W

C9 C10 C11 C12 (0.1, 0.1, 25, 22 35V) → V2
C13 C14 C15 C16 (0.1, 0.1, 25, 22 35V) → V3
C17 C18 C19 C20 (0.1, 0.1, 25, 22 35V) → V4

B77, B78 (8.5V) → CR8, CR9, CR10 IN4001 → R109 510 → C1 C2 C3 C4 (0.1, 0.1, 25, 22 35V) → V5

+5V → R12 2K → CR11, CR12 → C5 C6 C7 C8 (0.1, 0.1, 25, 22 35V) → V1

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN	DATE	TITLE	LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. -001
CHECKED	DATE	SIZE	DOCUMENT NUMBER / REV
ENGINEER	DATE	D	017-35-01 / C
APPROVED	DATE	SCALE	SHT 3 OF 11
FIRST USED ON			

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

OTB00H (SH2)
OTB01H (SH2)
OTB02H (SH2)
OTB03H (SH2)
OTB04H (SH2)
OTB05H (SH2)
OTB06H (SH2)
OTB07H (SH2)

VGG (SH3)
+5V

UARTBSYO* 4 (SH5)
T09H 9 (SH2)
T13L 1 (SH2)
C D Q CK LDENO
M91 74175

GRPSELOH 4 (SH2)
WIOOH (SH1)
M61 7408 LDSTBOH
M46 7400 LDGRPOL
UARTBSYO(SH5)M93-4

33 TR8 32 TR7 31 TR6 30 TR5 29 TR4 28 TR3 27 TR2 26 TR1
2
1
3

23 THRL
UARTMR 21 MR (SH2)

TRANSMITTER HOLDING REGISTER

OTB01H 6 (SH2)
M33 7408
CI04H 2 (SH1)
LDPRTSELO
PRTSEL 0B
10 PRTENO (SH5)M38-3

OTB00H 7 (SH2)
PRTSEL 0A
9 PRTENO (SH5)M38-13

OTB07H 2 (SH2)
RATESEL 0C
16

OTB06H 3 (SH2)
RATESEL 0B
15

M21 7475

OTB05H 12 (SH2)
M81 7474
11 CK-RATESEL 0A
9

OTB01H 35 PI (SH2)
OTB02H 39 EPE (SH2)
OTB00H 36 SBS (SH2)
OTB03H 38 WLS (SH2)
OTB04H 37 WLS (SH2)
F/F

PARITY BIT GEN

WORD LENGTH SELECT

STOP STOP PARITY TRANSMITTER REGISTER START

EMPTY DETECT

LOAD TIMING AND CONTROL SHIFT

TRC 40
TRE 24 RDYDLYO (SH5)M18-2
TRO 25 DATAOB(SH5) M10-1

M6 TR1602A UART0

CI05H 10 (SH1)
M61 7408 LDSTBGO
9 8 34

9 C RATEMUXO
10 B
11 A
M80 74151
OUTY 5

SH3
50 BAUD 4 D0
75 BAUD 3 D1
150 BAUD 2 D2
300 BAUD 1 D3
X BAUD 15 D4
9600 BAUD 14 D5
19200 BAUD 13 D6

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source

TITLE: LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. -001

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	047-35-01	C
ENGINEER	DATE			
APPROVED	DATE			
FIRST USED ON		SCALE	SHT 4 OF 11	

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANG	CHK	APPD

+5V
R103 33K
C21 .022 UF
CR73
LDGRPOL (SH4)
PRDYSELEN (SH1)M60-3
UART0 (SH4)
M18 74123 RDYDLY0
M93 7474
UARTBSY0
RESETLA (SH2)
LDEN0 (SH4)M91-4
GRPSEL0 (SH2)
M78 7408
RSTURDY0
DUARTRDY0
M93 7474
DRDYGO
M69 7420
DRDYGOI
M75 7402
RDYGRPOH
M75 7402
RDYGRPOL (SH2)M74-4
V5
V1
PRDYSEL(SH1)M55-8
PRDYSEL(SH1)M55-7
PRDYSEL(SH1)M55-6
PRDYSEL(SH1)M55-5
M23 7407
M23 7404
M23 7407
M23 7407

RECOO
R7 51
R8 51
Q4 2N3638A
PRDYOOL
M24 7414
CR4
R6 430
C25 .1
B42

+5V
DRIVEROO
2N4401
R9 1.2K
2N3638A Q3
Q2
CR6
CR7
R5 100
CR5
R4 1.2K
B8

RECOI
PRDYOIL
R13 R14 Q5
M24 7414 CR13 R15 C26
B38

DRIVERO1
R16
Q7 CR15
CR16 R18 CR14 R17
Q6
B6

RECO2
PRDYO2L
R19 R20 Q8
M24 7414 CR17 R21 C27
B14

DRIVERO2
R22
Q10 CR19
CR20 R24 CR18 R23
Q9
B10

RECO3
PRDYO3L
R25 R26 Q11
M24 7414 CR21 R27 C28
B13

DRIVERO3
R28
Q13 CR23
Q12 CR24 R30 CR22 R29
B4

DATAOB
M10 7408
UART0 (SH4)
PRTSELOB (SH4)
PRTSELOA (SH4)
PRTENO
M38 74155
DATA1C 1Y0
STRIG 1Y1
SELB 1Y3
SELA 2Y3
2Y2
DATA2C 2Y1
STR2G 2Y0
M53 7476
DRDYO3
M53 7476
DRDYO2
M39 7476
DRDYO1
M39 7476
DRDYOO

TIO103 (SH1)
RSTRDY03
M68 7408
TIO102 (SH1)
RSTRDY02
M68 7408
TIO101 (SH1)
RSTRDY01
M68 7408
RESETLA (SH2)
TIO100 (SH1)
RSTRDY00
M68 7408

This document is the property of INCOTERM CORPORATION and is loaned on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation, without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

TITLE: LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. -001

DRAWN	DATE
CHECKED	DATE
ENGINEER	DATE
APPROVED	DATE
FIRST USED ON	

SIZE D | DOCUMENT NUMBER 047-35-01 | REV C
SCALE | SHT 5 OF 11

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APP'D

OTB00H (SH2)
OTB01H (SH2)
OTB02H (SH2)
OTB03H (SH2)
OTB04H (SH2)
OTB05H (SH2)
OTB06H (SH2)
OTB07H (SH2)

VGG (SH3)
+5V

UARTBSY* (SH7)
T03H (SH2)
T13L (SH2)
M91 74175
GRPSEL1H (SH2)
M61 7408
LDSTBIH
WI00H (SH1)
M46 7400
LDGRPIL
UARTBSY1 (SH7) M92-4
23 THRL
UARTMR 21 MR (SH2)

TR8 TR7 TR6 TR5 TR4 TR3 TR2 TR1
TRANSMITTER HOLDING REGISTER

OTB01H 6 (SH2)
M33 7408
CI04H (SH1)
LDPRTSEL
M81 7474
PRTSEL 1B
PRTEN1 M42-3 (SH7)
OTB01H 35 PI (SH2)
F/F
PARITY BIT GEN

OTB02H 39 EPE (SH2)
OTB00H 36 SBS (SH2)
OTB03H 38 WLS (SH2)
OTB04H 37 WLS (SH2)
F/F

OTB00H 7 (SH2)
PRTSEL 1A
PRTEN1 M42-13 (SH7)

OTB07H 2 (SH2)
RATESEL 1C
OTB06H 3 (SH2)
RATESEL 1B
M36 7475

CI05H (SH1)
M61 7408
LDSTBG1

LOAD TIMING AND CONTROL
SHIFT
TRC 40
TRE 24 RDYDLY1 M18-10 (SH7)

WORD LENGTH SELECT

STOP STOP PARITY TRANSMITTER REGISTER START
TRO 25 DATA1B (SH7) M10-5

EMPTY DETECT

M22 TR1602A UART1

OTB05H 2 (SH2)
M81 7474
RATESEL 1A

SH3
50 BAUD
75 BAUD
150 BAUD
300 BAUD
X BAUD
9600 BAUD
19200 BAUD

C RATEMUX1
B M96
A 74151
D0 D1 D2 D3 D4 D5 D6
OUTY 5

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. -001

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	047-35-01	C
ENGINEER	DATE			
APPROVED	DATE			

NEXT USED ON

SCALE — SHT 6 OF 11

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+5V
R59 33K
C22 .022 UF
CR74
LDGRPIL (SH6)
UART1 (SH6)
M18 74123 RDYDLY1
M92 7474
UARTBSY1
RESETLB (SH2)
PRDYSELEN M60-13 (SH11)
LDEN1 (SH6)M91-5
GRPSEL1 (SH2)
M78 7408
RSTURDY1
DUARTRDY1
M92 7474
DRDYG1
M69 7420
M75 7402
RDYGRPIH
M75 7402
RDYGRPIL (SH21M74-1)
V5
V1
PRDYSEL(SH11M55-4)
PRDYSEL(SH11M55-3)
PRDYSEL(SH11M55-2)
PRDYSEL(SH11M55-1)
M28 7407
PRTEN1
DATA1B
UART1 (SH6)
M10 7403
PRTSEL1B (SH6)
PRTSEL1A (SH6)
M42 74155
DATA1C 1Y0
STRIG 1Y1
SELB 1Y3
SELA 2Y3
2Y2
DATA2C2Y1
STR2G 2Y0
M41 7476
DRDY07
M41 7476
DRDY06
M52 7476
DRDY05
M52 7476
DRDY04
TI0107 (SH11)
TI0106 (SH11)
TI0105 (SH11)
TI0104 (SH11)
RSTRDY07
RSTRDY06
RSTRDY05
RSTRDY04
M67 7408
RESETLB (SH2)
REC04
PRDY04L
M24 7414
2N3638A
Q14
R31 51
R32 51
R33 430
C29 .1
CR25
B12
DRIVER04
Q16
R34 1.2K
2N3638A
2N4401
Q15
CR27
CR28
R36 100
CR26
R35 1.2K
B68
REC05
PRDY05L
R37 R38
Q17
CR29 R39 C30
B16
DRIVER05
Q19
CR31
R40
Q18
CR32 R42 CR30 R41
B48
REC06
PRDY06L
R43 R44
Q20
M27 7414
CR33 R45 C31
B60
DRIVER06
R46
Q22
CR35
Q21
CR36 R48 CR34 R47
B54
REC07
PRDY07L
R49 R50
Q23
M27 7414
CR37 R51 C32
B56
DRIVER07
R52
Q25
CR39
Q24
CR40 R54 CR38 R53
B66

INCOTERM CORPORATION

LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. -001

SIZE D | DOCUMENT NUMBER 047-35-01 | C

SHEET 7 OF 11

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

OTB00H (SH2)
OTB01H (SH2)
OTB02H (SH2)
OTB03H (SH2)
OTB04H (SH2)
OTB05H (SH2)
OTB06H (SH2)
OTB07H (SH2)

+5V
VGG (Sh3)

33 TR8 32 TR7 31 TR6 30 TR5 29 TR4 28 TR3 27 TR2 26 TR1

UARTBSY2* (SH9L)
TO9H (SH2)
T13L (SH2)
M91 74175

GRPSEL2H (SH2)
LDSTB2H
M76 7408
WI00H (SH1)
LDGRP2L
M46 7400
UARTBSY2 M77-4 (SH9)
23 THRL

UARTMR 21 MR (SH2)

TRANSMITTER HOLDING REGISTER

OTB01H 6 (SH2)
CI04H 13 (SH1)
M65 7408
LDPRTSEL2
PRTSEL 2B
10 PRTEN2 M54-3 (SH9)

OTB00H 7 (SH2)
PRTSEL 2A
9 PRTEN2 M54-13 (SH9)

OTB07H 2 (SH2)
RATESEL 2C
16

OTB06H 3 (SH2)
RATESEL 2B
15
M51 7475

OTB05H 2 (SH2)
M79 7474
RATESEL 2A

CI05H (SH1)
M76 7408
LDSTBG2

OTB01H 35 PI (SH2)
OTB02H 39 EPE (SH2)
OTB00H 36 SBS (SH2)
OTB03H 38 WLS (SH2)
OTB04H 37 WLS (SH2)
34
F/F

PARITY BIT GEN

WORD LENGTH SELECT

STOP STOP PARITY TRANSMITTER REGISTER START

EMPTY DETECT

LOAD TIMING AND CONTROL SHIFT

TRC 40
TRE 24 RDYDLY2 (SH9) M48-10
TRO 25 DATA2BI (SH9) MG5-1

M37 TR1602A UART2

SH3
50 BAUD 4
75 BAUD 3
150 BAUD 2
300 BAUD 1
XBAUD 15
9600 BAUD 14
19200 BAUD 13

CRATEMUX2
M95 74151
B 10
A 11
D0 4
D1 3
D2 2
D3 1
D4 15
D5 14
D6 13
OUTY 5
9

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

THIS DRAWING IS THE PROPERTY OF INCOTERM CORPORATION AND IS LOANED SUBJECT TO THE AGREEMENT THAT IT IS NOT TO BE DISCLOSED, REPRODUCED IN WHOLE OR IN PART, OR USED FOR MANUFACTURE FOR ANYONE EXCEPT INCOTERM CORP. EXCEPT WITH WRITTEN PERMISSION AND THAT NO RIGHT IN ANY INVENTION DISCLOSED IN THIS DOCUMENT IS GRANTED BY IT OR BY THE SALE OF ANY ITEM SHOWN. THIS NOTICE DOES NOT LIMIT THE RIGHT TO USE INFORMATION OBTAINED FROM ANOTHER SOURCE.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ±1/64, DECIMALS .XX ±.01, .XXX ±.005, ANGLES ±1°

TITLE: LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. —001

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	047-35-01	C
ENGINEER	DATE			
APPROVED	DATE			
FIRST USED ON		SCALE	SH 8 OF 11	

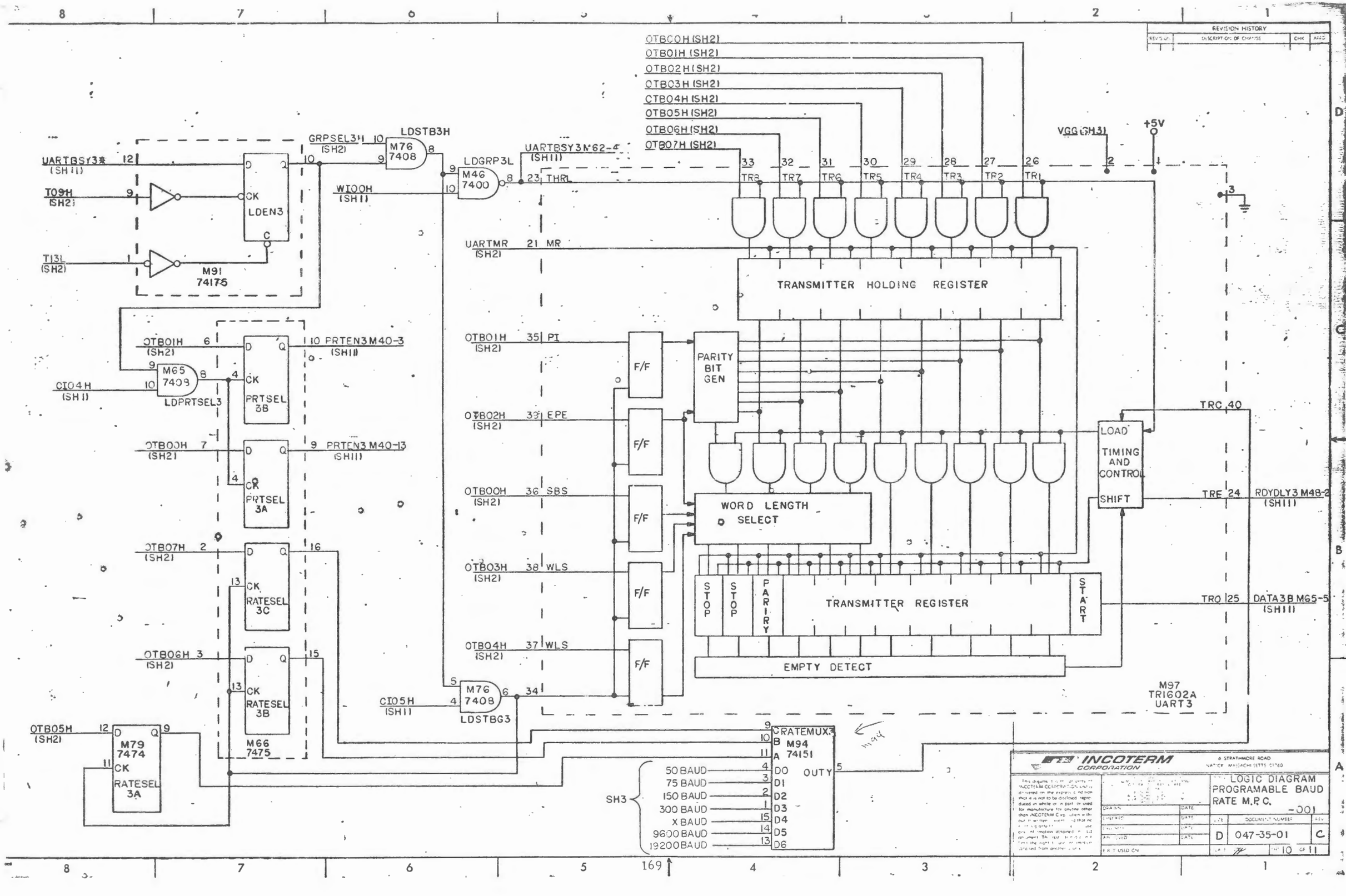
REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+5V
R104
33K
C23
.022
UF
CR75
LDGRP2L (SH8)
UART2
(SH8)
M48
74123
RDYDLY2
M77
7474
UARTBSY2
RESETLB
(SH2)
PRDYSELEN (SH1) M60-10
LDEN2 (SH8) M91-13
DUARTRDY2
M77
7474
GRPSEL2
(SH2)
RSTURDY2
M78
7408
M70
7420
DRDYG2
M47
7402
RDYGRP2H
M47
7402
RDYGRP2L
(SH2) M74-12
V5
V1
PRDYSEL (SH1) M55-23
REC08
PRDY08L
M27
7414
CR41
R57
430
C33
.1
51
R55
51
R56
Q26
2N3638A
B62
+5V
R107
1.2K
2N3638A
Q27
DRIVER08
Q28
2N4401
CR43
CR44
100
R60
CR42
R58
1.2K
B70
M28
7407
V4
V3
V2
PRDYSEL (SH1) M55-22
REC09
PRDY09L
M27
7414 CR45 R63 C34
R61 R62
Q29
B58
R64
DRIVER09
Q31
CR47
Q30
CR48 R66 CR46 R65
B64
M28
7407
PRDYSEL (SH1) M55-21
RECIO
PRDY10L
M27
7414 CR49 R69 C35
R67 R68
Q32
B40
R70
DRIVER10
Q34
CR51
Q33
CR52 R72 CR50 R71
B20
M25
7407
PRDYSEL (SH1) M55-20
REC11
PRDY11L
M27
7414 CR53 R75 C36
R73 R74
Q35
B44
R76
DRIVER11
Q37
CR55
Q36
CR56 R78 CR54 R77
B36
M25
7407
PRTEN2
DATA2B
M65
7408
UART2
(SH8)
PRTSEL2B (SH9)
PRTSEL2A (SH9)
DATA1C 1Y0
STRIG 1Y1
M54
74155
SELB 1Y3
SELA 2Y3
2Y2
DATA2C 2Y1
STR2G 2Y0
M56
7476
DRDY11
M56
7476
DRDY10
M57
7476
DRDY09
M57
7476
DRDY08
RSTRDY11
TIO111
(SH1)
M71
7408
RSTRDY10
TIO110
(SH1)
RSTRDY09
TIO109
(SH1)
RSTRDY08
RESETLB
(SH2)
TIO109
(SH1)

INCOTERM CORPORATION
6 STEATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and shall not be reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no copy or part thereof shall be given or otherwise disclosed to any third party without the written consent of INCOTERM Corporation. INCOTERM Corporation reserves the right to use information furnished by others.

DRAWN	DATE	LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. — 001		
CHECKED	DATE	SIZE	DOCUMENT NUMBER	REV
		D	047-35-01	C
APPROVED	DATE			
FIRST USED ON		SCALE	SHEET 9 OF 11	


REVISION HISTORY
REVISION | DESCRIPTION OF CHANGE | CHK | APPD
OTBC0H (SH2)
OTB01H (SH2)
OTB02H (SH2)
OTB03H (SH2)
CTB04H (SH2)
OTB05H (SH2)
OTB06H (SH2)
OTB07H (SH2)
VGG (SH3)
+5V
UARTBSY3* (SH11)
T09H (SH2)
T13L (SH2)
M91 74175
LDEN3
GRPSEL3H (SH2)
M76 7408
LDSTB3H
WIOOH (SH11)
LDGRP3L
M46 7400
UARTBSY3M62-4 (SH11)
23 THRL
UARTMR 21 MR (SH2)
TRANSMITTER HOLDING REGISTER
TR8 TR7 TR6 TR5 TR4 TR3 TR2 TR1
OTB01H 35 PI (SH2)
OTB02H 33 EPE (SH2)
OTB00H 36 SBS (SH2)
OTB03H 38 WLS (SH2)
OTB04H 37 WLS (SH2)
F/F
PARITY BIT GEN
WORD LENGTH SELECT
STOP STOP PARITY
TRANSMITTER REGISTER
START
EMPTY DETECT
LOAD
TIMING AND CONTROL
SHIFT
TRC 40
TRE 24 RDYDLY3 M48-2 (SH11)
TRO 25 DATA3B M65-5 (SH11)
M97 TR1602A UART3
OTB01H (SH2)
CI04H (SH11)
M65 7408
LDPRTSEL3
10 PRTEN3M40-3 (SH11)
PRTSEL 3B
OTB00H (SH2)
9 PRTEN3M40-13 (SH11)
PRTSEL 3A
OTB07H (SH2)
RATESEL 3C
OTB06H (SH2)
RATESEL 3B
M66 7475
CI05H (SH11)
M76 7408
LDSTBG3
OTB05H (SH2)
M79 7474
RATESEL 3A
SH3
50 BAUD
75 BAUD
150 BAUD
300 BAUD
X BAUD
9600 BAUD
19200 BAUD
D0 D1 D2 D3 D4 D5 D6
CRATEMUX3
B M94 74151
A
OUTY
M94
INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760
LOGIC DIAGRAM PROGRAMABLE BAUD RATE M.P.C. -001
DRAWN DATE
CHECKED DATE
ENGR DATE
APPROVED DATE
NEXT USED ON
DOCUMENT NUMBER D 047-35-01 REV C
SCALE NONE SHEET 10 OF 11
169

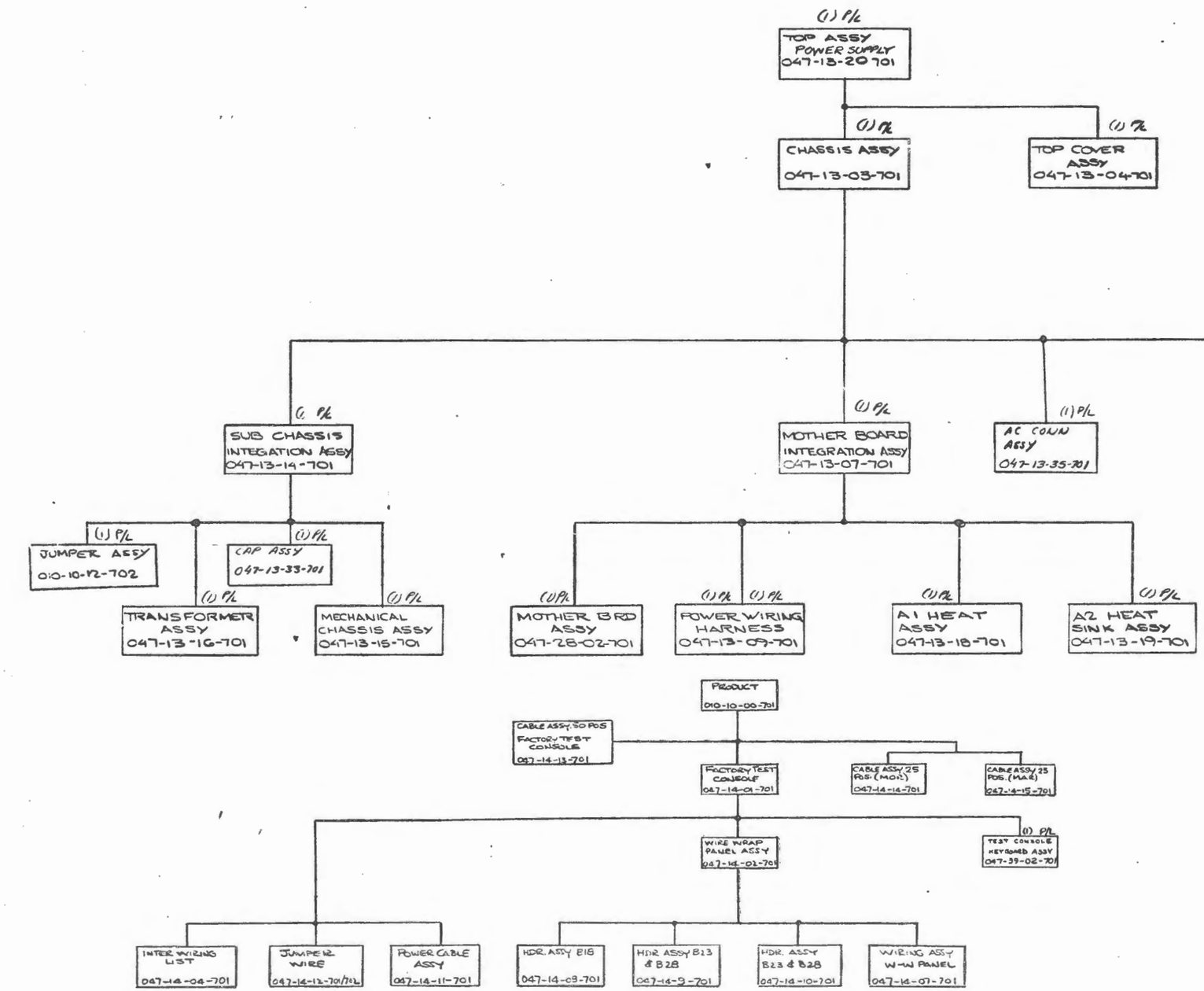
REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+5V
R108 33K
C24 .022 UF
CR76
LDGRP3L(SH10)1
PRDYSELEN(SH1)M60-5
UART3 (SH10)
M48 74123 RDYDLY3
M62 7474
UARTBSY3
RESETLB (SH2)
RESETLA (SH2)
LDEN3(SH10)M91-12
DUARTRDY3
M62 7474
GRPSEL3 (SH2)
RSTURDY3
M78 7408
DRDYG3
M70 7420
M47 7402
RDYGRP3H
RDYGRP3L M74-9 (SH2)
PRDYSELISH1)M55-19
V5
V1
REC12
51 R79
51 R80
Q38
B74
PRDY12L
M29 7414
2N3638A
CR57
430 R81
.1 C37
+5V
DRIVER12
R82 1.2K
Q40
B52
2N3638A
2N2401
CR59
Q39
CR60
100 R84
CR58
R83 1.2K
M25 7407
V4
V3
V2
PRTEN3
DATAIC 1Y0
STRIG 1Y1
M40 74155
SELB 1Y3
SELA 2Y3
2Y2
DATA2C 2Y1
STRG2 2Y0
UART3 (SH10)
DATA3B
M65 7408
PRTSEL3B(SH10)
PRTSEL3A(SH10)
M43 7476
DRDY15
PRDYSELISH1)M55-18
REC13
PRDY13L
R85 R86
Q41
B82
M29 7414
CR61 R87 C38
R88
DRIVER13
Q43
CR63
B50
Q42
CR64 R90 CR62 R89
RSTRDY15
TIO115 (SH1)
M72 7408
M43 7476
DRDY14
PRDYSELISH1)M55-17
REC14
PRDY14L
R91 R92
Q44
B80
M29 7414
CR65 R93 C39
RSTRDY14
TIO114 (SH1)
M53 7476
DRDY13
R94
DRIVER14
Q46
CR67
B34
CR68 R96 CR66 R95
Q45
RSTRDY13
TIO113 (SH1)
M58 7476
DRDY12
PRDYSELISH1)M55-16
REC15
PRDY15L
R97 R98
Q47
B72
CR69 R99 C40
RESETLB (SH2)
TIO112 (SH1)
RSTRDY12
R100
DRIVER15
Q49
CR71
B26
Q48
CR72 R102 CR70 R101

INCOTERM CORPORATION
LOGIC DIAGRAM
PROGRAMABLE BAUD RATE M.P.C. -001
SIZE D
DOCUMENT NUMBER 047-35-01
REV C
SCALE NONE
SHEET 11 OF 11

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD



ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information retained from any source.

DRAWN	DATE 11/8/73	TITLE	DOCUMENT TREE TCI POWER SUPPLY 001
CHECKED	DATE	SIZE	DOCUMENT NUMBER / REV
ENGINEER	DATE	D	047-01-01 / U
APPROVED	DATE		
FIRST USED ON		SCALE X	SHT 2 2

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RD#7378	[illegible]	[illegible]
B		REVISED/ECO 3086 11/1/74	RM	RM
C		REV/ECO 3262 6-24-74	[illegible]	
D		REVISED/ECO 3345 8/29/74	[illegible]	

(ON-OFF) SW2 — (INTERLOCK) SW1 — (N.O.) — (COM) — WHT

POWER SUPPLY — P1

REMOTE FAN — PS — J9 — WHT — RED — BLK — BLK

A.C. CONN — WHT — BLK — GRN

P1		
+5V	10	#14 RED
GND	5	#14 BLK
GND	4	#14 BLK
GND	3	#14 BLK
+5V	9	#14 RED
+5V	8	#14 RED
GND	2	#14 BLK
+5V SENSE	11	#14 RED
GND	1	#22 BLK
+5V SENSE RET	6	#14 BLK
+5V	7	#14 RED
+5V	12	#14 RED

#14 BLK

P2		
PWR ON	7	#22 WHT
+12V	10	#22 ORG
-13V	5	#22 VIO
-15V	2	#22 BLU
GND	3	#14 BLK
GND	1	#14 BLK
VSPB	8	#22 BRN
VSPA	6	#22 GRY
VSP CTRL	11	#22 WHT
+8.5V	4	#22 GRN
SPARE	9	#22 GRN
SPARE	12	

E49 — C04 — BUSS — C03 — C02 — C01

E24 — A01 — E23 — A02 — E22 — A03 — BUSS — A04 — A05 — A06 — E18 — A07 — A08 — E16 — A09 — E15 — A10 — E14 — A11 — E13

E58 — E12 — E11 — E10 — E9 — E8 — E7 — E6 — E5 — E4 — E3 — E2 — E1

E57 — #22 BLK

E48 — E47 — E46 — BUSS — E42 — E40

E25 — B01 — B02 — E27 — B03 — BUSS — B04 — E29 — B05 — B06 — B07 — E32 — B08 — B09 — E34 — B10 — B11

E56 — C05 — BUSS — C06 — C07 — C08 — E53

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION — 6 STRATHMORE ROAD NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in this document. This restriction does not limit the right to use information obtained from another source."

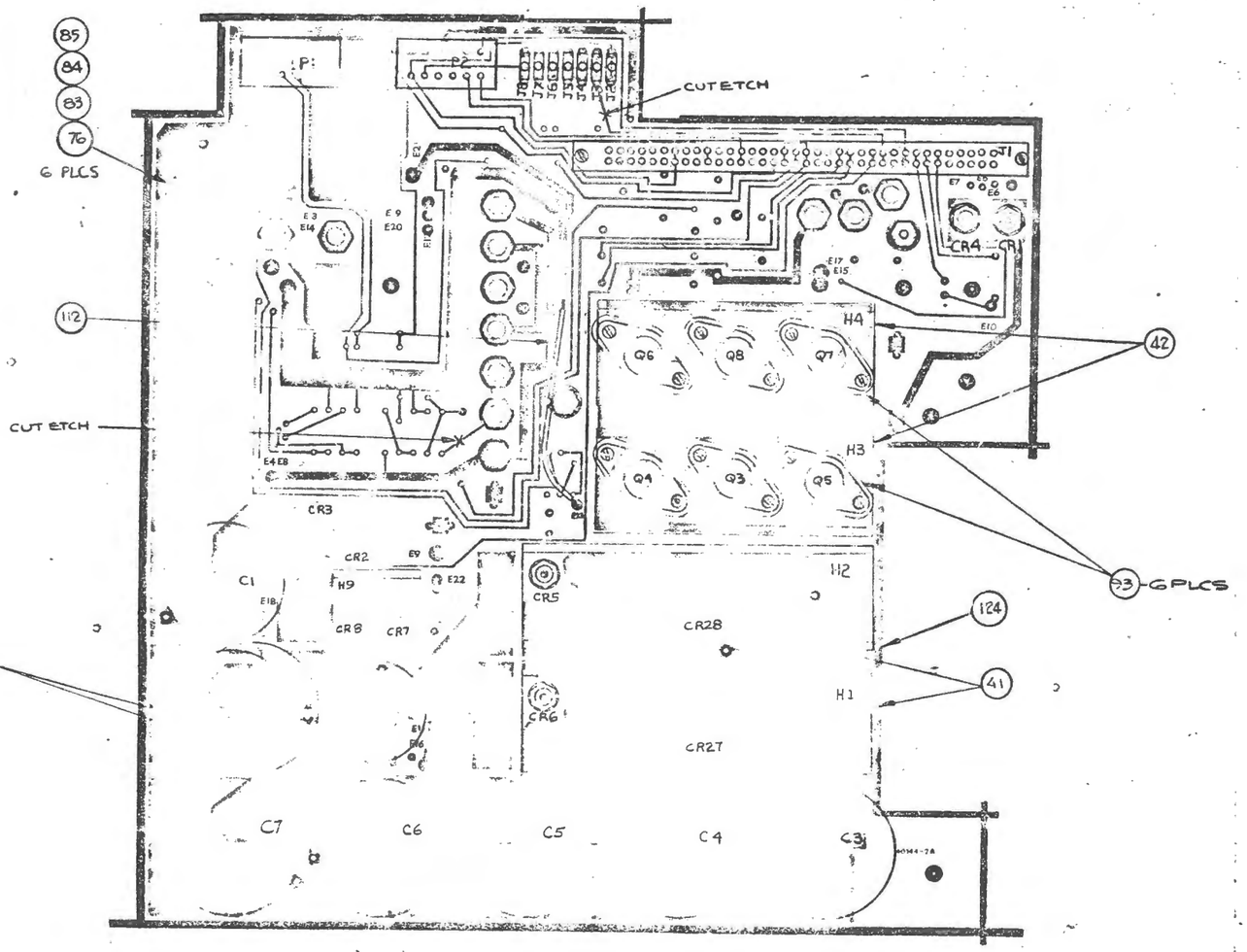
DRAWN — DATE 12/6/73 — CHECKED — DATE — ENGINEER — DATE — APPROVED — DATE — FIRST USED ON 047-10-01 701

TITLE: POWER WIRING SCHEMATIC 001

SIZE	DOCUMENT NUMBER	REV
D	047-10-56	D

SCALE — SHT 1 OF 1

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE		
B		RD#737W		
	B1	REVISED/ECO 3004		
C		REVISED/ECO 3088		
D		REV UPDATE ONLY ECO 3088A		
	D1	REV UPDATE ONLY ECO 3207		
	D2	REVISED ECO 3236		
E		REVISED / ECO 3251		
F		REVISED / ECO 3253		
G		REVISED/ECO 3321		
	G1	UPDATED/ECO 3337		
	G2	REVISED/ECO 3303		
	G3	REV CHG 3483		
	G4	REVISED ECO 3488		
H		REV/ECO 3669 12-30-74		
	H1	REVISED/ECO 3866		



NOTES:
1. WHEN REPLACING CAPACITOR, C8, WITH STM PART NO. 91M25RC1952G OR CALLINS PART NO. 13-85CES-19500-25-5-I, CAPACITOR MUST BE MOUNTED USING ADJACENT HOLE CENTERS SHOWN BY CAPACITOR IN PHANTOM. HOLE DESIGNATED A' MUST BE ELONGATED TO ACCOMODATE CAPACITOR MOUNTING.

ITEM	REFERENCE DESIGNATION
30	C8
28	P2
27	P1
26	J1
24	J2,3,4,5,6,7,8
25	H9
23	S1
22	H3,4
21	H1,2
28	Q5,6,7,8,3
27	Q4
26	
24	CR27,28
25	CR7,8
24	CR1,2,3,4,5,6
24	C1,
23	C3,4,5,6,7
22	C2

COMPONENT SIDE

ASSY WITH ARTWORK 047-28-03-701 REV A.

INCOTERM CORPORATION — 8 FEATHERBORE ROAD

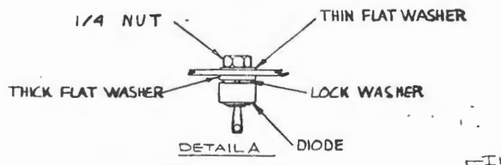
MOTHER BOARD ASSY 701

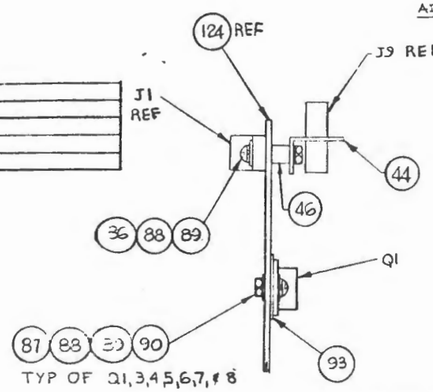
SIZE D — DOCUMENT NO. 047-28-02 — REV H1

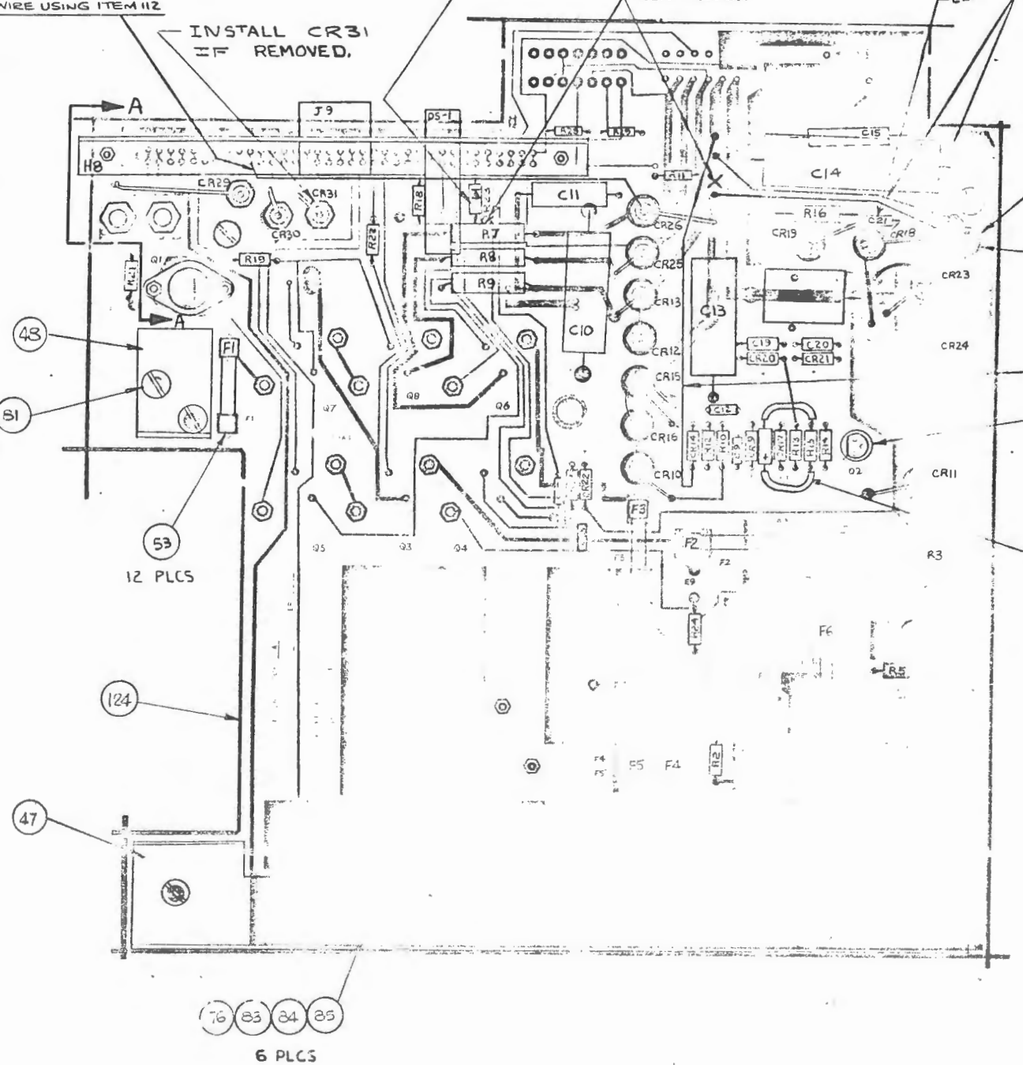
SHEET 1/1

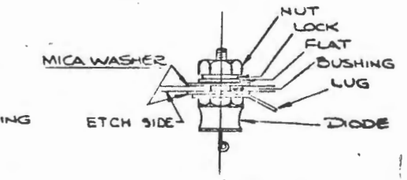
REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
D1	REV UPDATE ONLY E.O 3207	C.P.	

ITEM NO.	REFERENCE DESIGNATION
136	C22
72	R19
71	R19
70	R19, 22
69	R19, 22
68	R19 * 22
67	R21, 22
66	R21, 22
65	R18, 21 *
64	R18, 21
63	R13 * 21
62	R18
61	R18
58	J2,3,4,5,6,7,8
52	F4,F5
51	F2,F6
50	F1,F3
49	DS1
37	CR33
36	R16
35	R14
34	R13
33	R10,12,15,17,24,28,29
32	R7,8,9
31	R4,11
30	R2,3,5
29	Q1
25	Q2
24	CR24
23	CR22
22	CR20,21,32
21	CR19
20	CR17
19	CR14
18	CR10,15, 3,23
17	CR9
15	CR11
14	CR12,13,29,30,31,25
13	C19,20
12	C18
11	C9,12,17,C21
10	C16
9	C15
8	C14
7	C13
6	C11
5	C10









ALL HDWE SUPPLIED WITH ITEM 14.

DETAIL B

ETCH SIDE

ITEM NO.	PART/ASSY NO	DESCRIPTION	QTY
37	DSIN1202HDW	DIODE W/MTG HDW (SOLITRON)	1

ASSY WITH ARTWORK 047-28-03-701 REV A.

INCOTERM CORPORATION

MOTHER BOARD ASSEMBLY

DRAWN D. Ward

CHECKED

ENGINEER

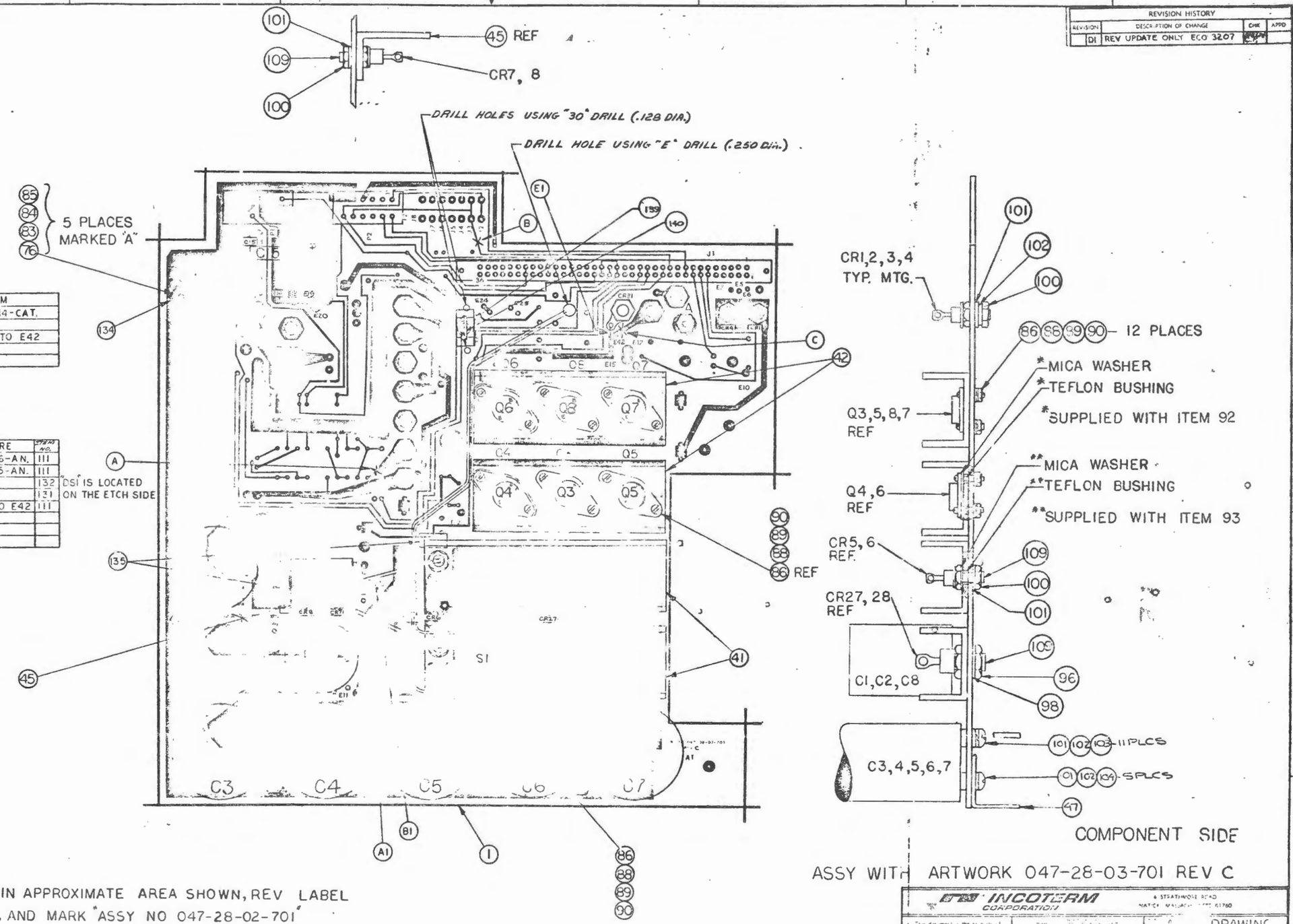
MFG

DOCUMENT NO. 701 REV

D 047-28 02 H1

SCALE A SHEET 2 OF 8

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
D1	REV UPDATE ONLY ECO 3207		



CUT ETCH FROM	
A	CR16-CAT. TO CR14-CAT.
B	J3 TO J1-21
C	CR30-CATHODE TO E42

ADD JUMPER WIRE		JUMPER NO.	
A1	CR8-CAT. TO CR6-AN.	111	
B1	CR7-CAT. TO CR5-AN.	111	
C1	S1-1 TO DS1-1	132	DS1 IS LOCATED ON THE ETCH SIDE
D1	S1-2 TO DS1-2	131	
E1	CR31-CAT.(LUG) TO E42	111	

ITEM NO.	REFERENCE DESIGNATION
28	Q5,6,7,8,3
27	Q4
26	
24	CR27,28
15	CR7,8
14	CR1,2,3,4,5,6
9	C15
4	C1,
3	C3,4,5,6,7
2	C2

NOTES:

1 LOCATE IN APPROXIMATE AREA SHOWN, REV LABEL ITEM 118, AND MARK "ASSY NO 047-28-02-701" AND LATEST ASSY REV

2 USE ITEM 116 (HEAT SINK COMPOUND) ON ALL COMPONENTS MOUNTED ON A HEAT SINK, EXCEPT FOR CR7,8,27 & 28.

3 DISCARD HARDWARE SUPPLIED WITH DICDES

ASSY WITH ARTWORK 047-28-03-701 REV C

INCOTERM CORPORATION — 4 STRATHMORE ROAD, NATICK, MASS. 01760

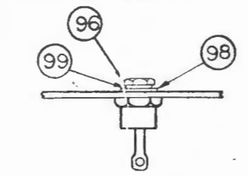
DRAWING
PC SUPPLY
MOTHER BD — 701
DWG NO. D 047-28-02 H1
3 OF 8

175

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
D1	REV UPDATE ONLY ECO 3207		

✳ INITIAL VALUE

ITEM NO.	REFERENCE DESIGNATION
136	C22
72	R19
71	R19✳
70	
69	
C7	
70	R 19, 22
69	R 19, 22
68	R 19, 22✳
67	R21,22
66	R21,22
65	R18 21✳
64	R18 21
63	R18✳ 21
62	R18
61	R18
58	J2,3,4,5,6,7,8
52	F4,5
51	F2,6
50	F1,F3
49	DS1
48	
47	
46	
44	
38	CR25
37	CR33
36	R16
35	R14
34	R13
33	R10,12,15,17,24,28,29
32	R7, 8, 9
31	R4, 11
30	R2, 3, 5
29	Q1
25	Q2
24	CR24
23	CR22
22	CR20,26,32
21	CR19
20	CR7
19	CR14
18	CR10,5,16,23
17	CR9
16	CR16,26
15	CR11
14	CR1,2,13,29,30,31,25
13	C19,20
12	C18
11	C9,12,17,21
10	C16
8	C14
7	C13
6	C11
5	C10

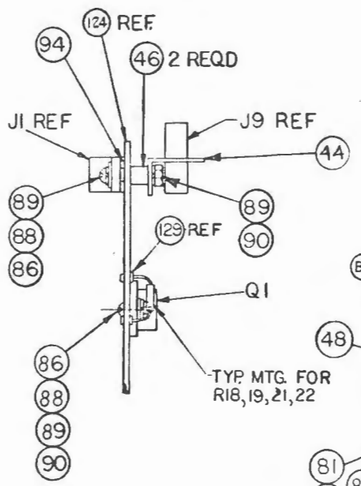


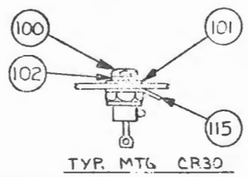
CR19,24

TYP MTG CR11, 12, 13, 16, 25, 26, 29,

DETAIL 'A'

TYP. MTG CR31

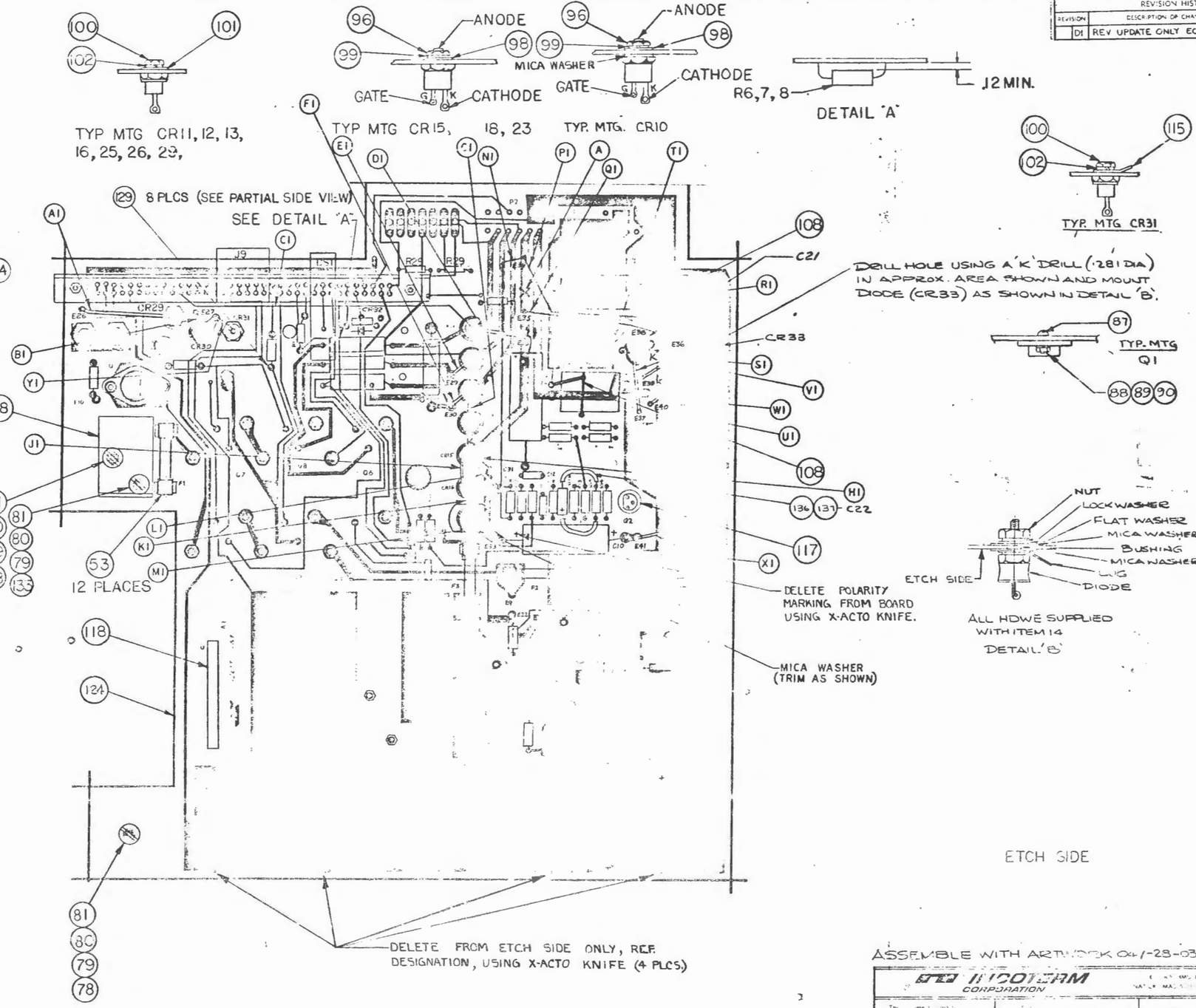




TYP. MTG CR30

CUT ETCH FROM	
A	E34 TO E35

ADD JUMPER WIRE		ITEM
A1	CR29-ANODE TO E26	111
B1	CR31-ANODE TO E27	111
C1	CR31-K TO CR30-ANODE	111
D1	CR28-ANODE TO E28	111
E1	CR25-ANODE TO E29	111
F1	CR13-ANODE TO E30	111
G1	CR13-AN. TO CR12-AN.	111
H1	CR15-K TO E31	111
J1	CR15-K TO CR16-ANODE	111
K1	CR16-ANODE TO CR10-K	111
L1	CR15-G TO E32	112
M1	CR10-G TO E33	112
N1	CR14 CATHODE TO E34	111
P1	CR33 CAT.(LUG) TO E34	111
Q1	CR33-ANODE TO E35	111
R1	CR18-K TO E36	111
S1	CR18-G TO E37	112
T1	CR9-CATHODE TO E33	111
U1	CR23-K TO CR24-ANODE	111
V1	CR23 K TO E39	111
W1	CR23-G TO E40	112
X1	CR11-CATHODE TO E41	111
Y1	CR31-AN. TO CR30-CAT.	111



DRILL HOLE USING A 'K' DRILL (.281 DIA) IN APPROX. AREA SHOWN AND MOUNT DIODE (CR33) AS SHOWN IN DETAIL 'B'.

ALL HDWE SUPPLIED WITH ITEM 14
DETAIL 'B'

ETCH SIDE

ASSEMBLE WITH ARTWORK 047-28-03-701 REV.C

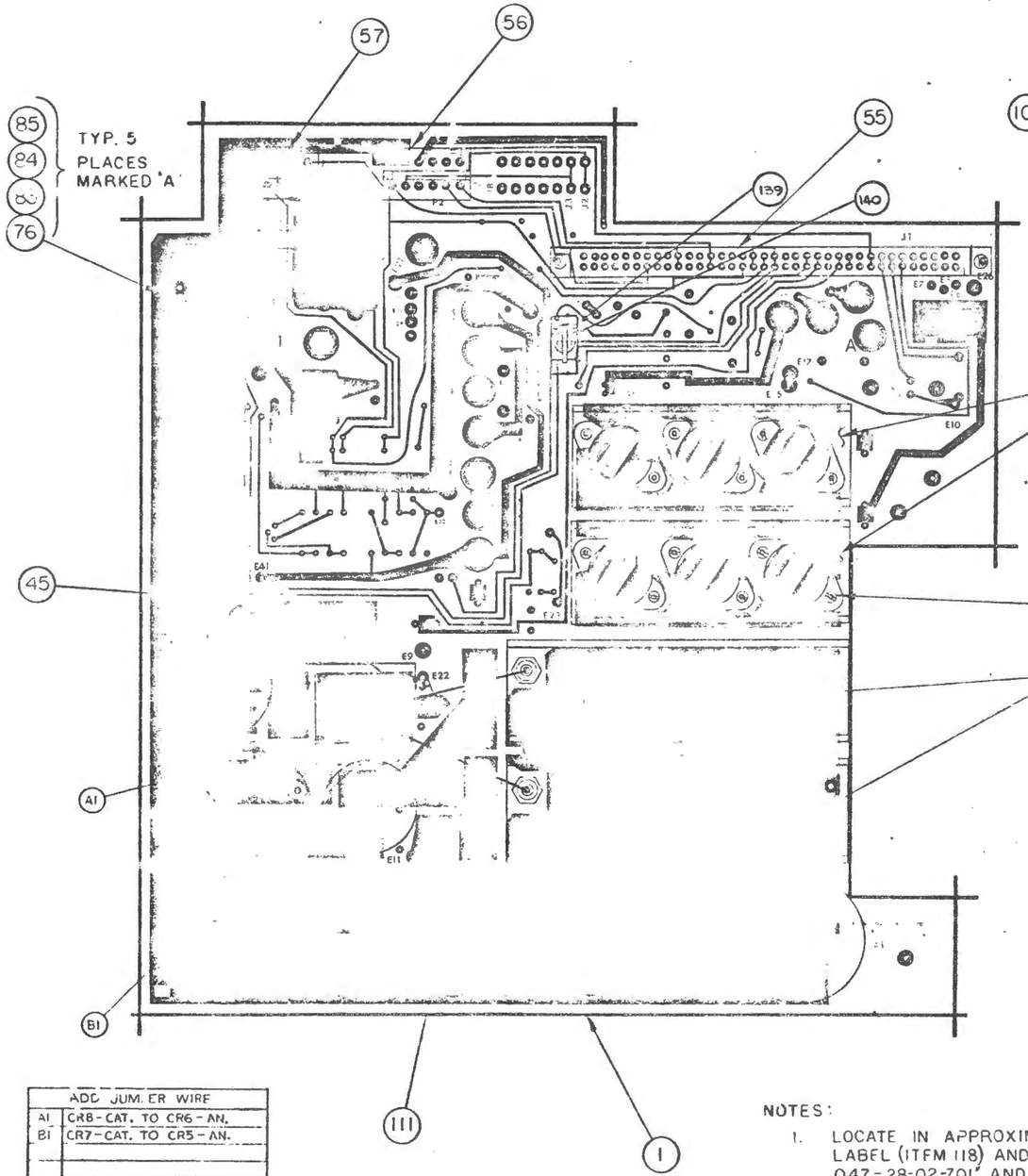
ITEM NO.	PART/ASSY NO.	DESCRIPTION	QTY
37	2331.202 HDW	DIODE W/MTG HDW (SOLITRON)	1

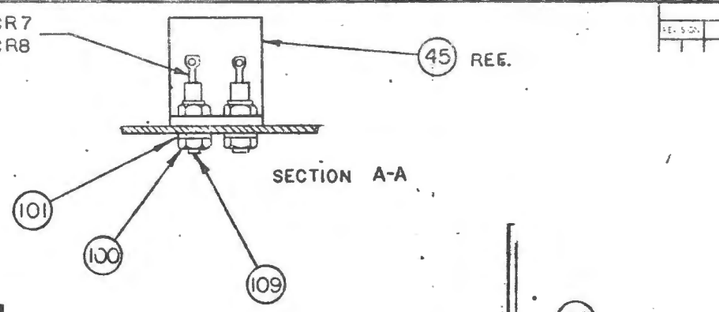
INCOTERM CORPORATION

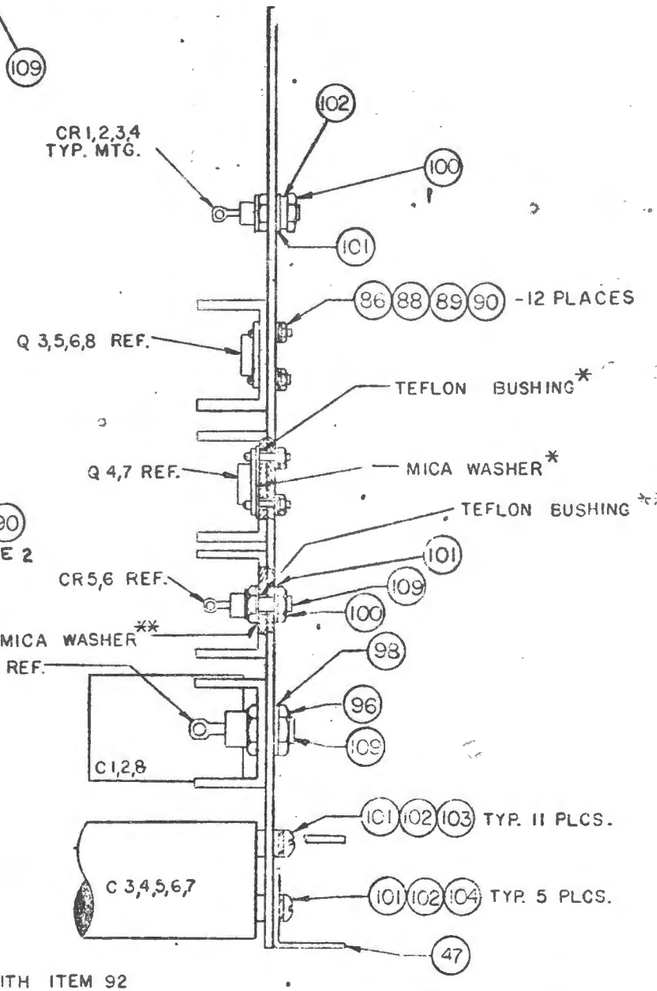
MOTHER BOARD ASSEMBLY 701

SIZE D | DOCUMENT NUMBER 047-28-02 | REV H1

SHT 4 OF 8







*SUPPLIED WITH ITEM 92
**SUPPLIED WITH ITEM 93

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-28-03-701 REV D

ITEM NO.	REFERENCE DESIGNATION
43	S1
42	
41	
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	Q 3,5-8
27	Q 4
26	
25	
24	CR 27,28
23	
22	
21	
20	
19	
18	
17	
16	
15	CR 7,8
14	CR 1-6
13	
12	
11	
10	
9	C15
8	
7	
6	
5	
4	C1
3	C3-7
2	C2
1	

ADD JUMPER WIRE	
A1	CR8-CAT. TO CR6-AN.
B1	CR7-CAT. TO CR5-AN.

NOTES:
1. LOCATE IN APPROXIMATE AREA SHOWN, REV LABEL (ITEM 118) AND MARK "ASSY NO. 047-28-02-701" AND LATEST ASSY REV.
2. USE ITEM 116 (HEAT SINK COMPOUND) ON ALL COMPONENTS MOUNTED ON A HEAT SINK EXCEPT CR7,8,27,28.
3. DISCARD HARDWARE SUPPLIED WITH DIODES.

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	DATE

INCOTERM CORPORATION

P.C. BOARD ASSY
POWER SUPPLY
MOTHER BD. -701

D 047-28-02 H1

5 OF 8

ITEM	REFERENCE DESIG.
136	C22
72	R19
71	R19 *
70	R19 22
69	R19 22
68	R19 22 *
67	R21,22
66	R21,22
65	R18 21 *
64	R18 21
63	R18 * 21
62	R18
61	R18
58	J2-8
52	F 4,5
51	F 2,6
50	F 1,3
37	
36	R16
35	R14
34	R13
33	R 10,12,15,17,24,27,28
32	R 7,8,9
31	R 4,11
30	R 2,3,5
29	Q1
25	Q2
24	CR 24
23	CR 22
22	CR 20,31,33
21	CR 19
20	CR 17
19	CR 14
18	CR 10 15,18,23
17	CR 9
16	CR 16,26
15	CR 1
14	CR 12,13,25,29,30,31,33
13	CR 5,20
12	C 18
11	C 9,12,17,21
10	C 16
8	C 14
7	C 13
6	C 11
5	C 10

ADD JUMPER WIRE	
AI	CR23 ANODE TO E41
BI	CR30-ANODE TO E27
CI	CR26-ANODE TO EYELET
DI	CR6-ANODE TO E29
EI	CR25-ANODE TO E39
FI	CR13-ANODE TO E35
GI	CR3 ANODE TO CR2-ANODE
HI	CR2-K TO C21
JI	CR15-K TO CR16 ANODE
KI	CR16 ANODE TO CR10 K
LI	CR15-G TO E32
MI	CR10-G TO E33
NI	CR33-ANODE TO E35
PI	CR18 K TO E36
QI	CR18 G TO E37
RI	CR10 CATHODE TO E38
SI	CR23-K TO CR24 ANODE
TI	CR23-K TO E39
UI	CR24-G TO E40
VI	CR11-CATHODE TO E41
WI	CR31-AN. TO E26

* INITIAL VALUE

SEE DETAIL "A"

SEE NOTE 1

SEE DETAIL B

ETCH SIDE

TYP ALL DIODE CONNECTION EXCEPT GATES

TYP ALL GATE CONNECTION

J1 REF

J9 REF.

Q1

TYP. MTG. FOR R 18,19,21,22

2 REQ'D

VIEW A-A

TYP. MTG CR15,18,23

ANODE

MICA WASHER

GATE

CATHODE

TYP. MTG CR10

R7,8,9

.12 MIN.

DETAIL "A"

TYP. MTG CR31

TYP. MTG. Q1

TYP MTG CR30

TYP. MTG CR 19,24

TYP MTG CR 11,12,13,16, 25,26,29,33

ASSEMBLE WITH ARTWORK 047-28-03-701 REV D

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION

This drawing is the property of INCOTERM CORPORATION. It is loaned for the express purpose that it will not be disclosed, nor used in whole or in part, or used for any purpose for any other than INCOTERM Corp. except with our written consent and that no part of it shall be copied. Upon completion of the use for which this document is loaned, the permission is not to be used in any way detrimental to our interest.

DRAWN

CHECKED Kurt Engel

APPROVED

FIRST USED ON

TITLE ASSY DWG — POWER SUPPLY MOTHER BD. 701

SIZE D | DOCUMENT NUMBER 047-28-02 | REV HI

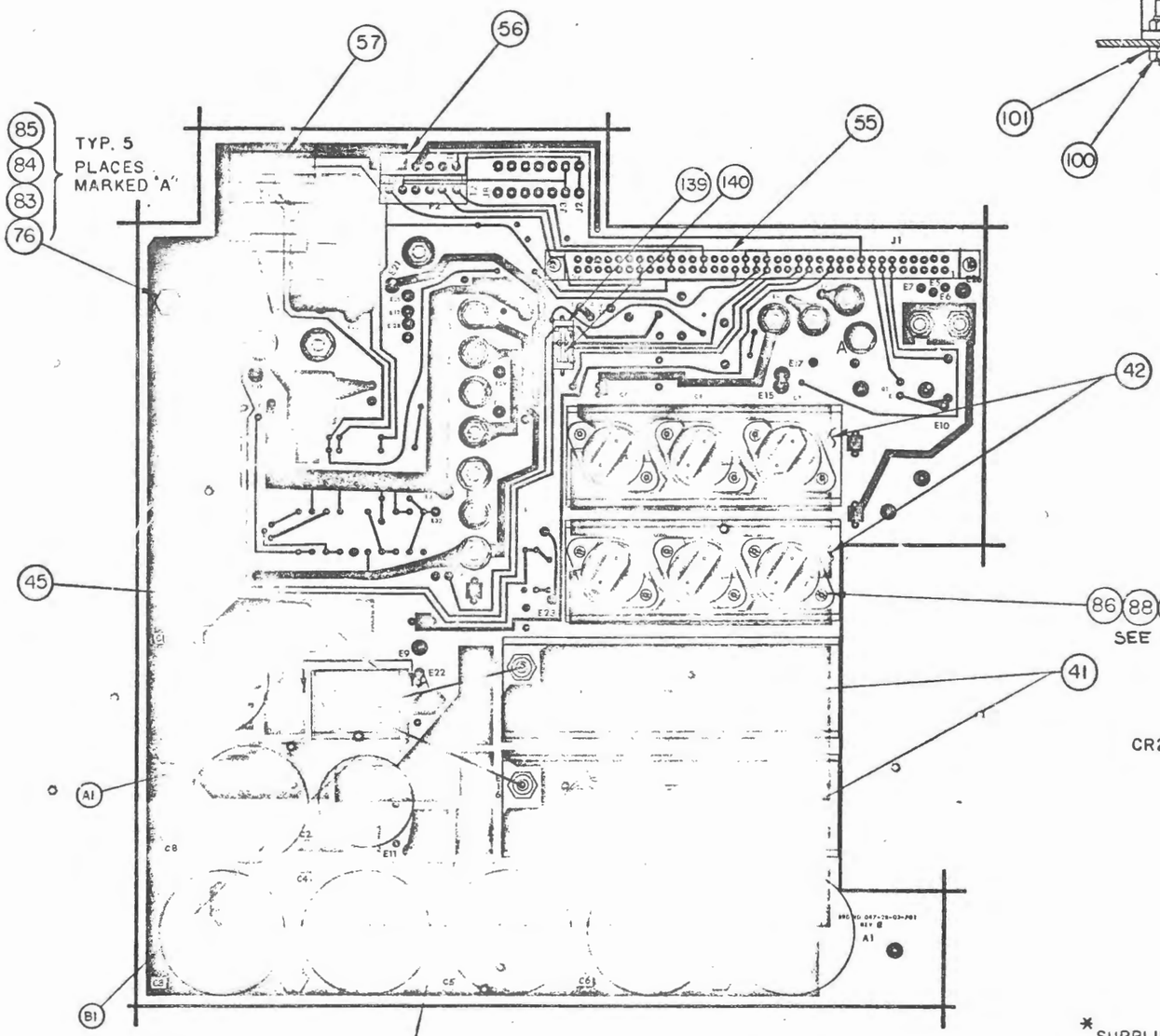
SCALE 1/1 | SHT 6 OF 8

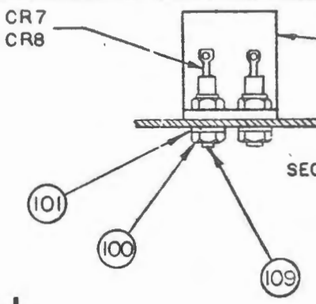
REVISION HISTORY

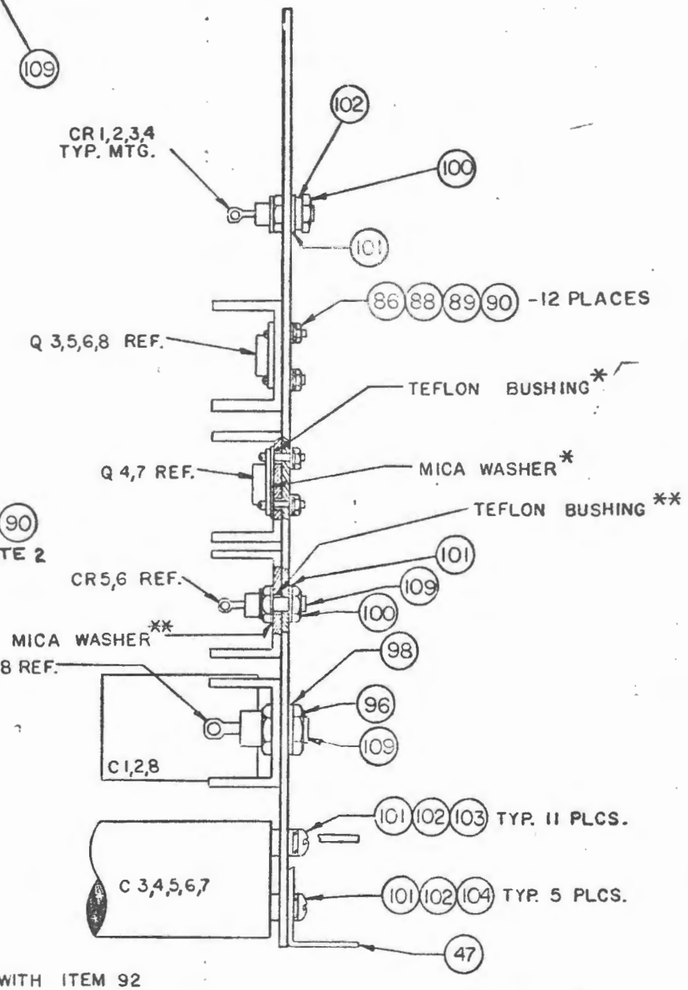
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

178

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD







*SUPPLIED WITH ITEM 92
**SUPPLIED WITH ITEM 93

ITEM NO.	REFERENCE DESIGNATION
130	C8
43	S1
42	
41	
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	Q 3,5-8
27	Q 4
26	
25	
24	CR 27,28
23	
22	
21	
20	
19	
18	
17	
16	
15	CR 7,8
14	CR 1-6
13	
12	
11	
10	
9	C 15
8	
7	
6	
5	
4	C 1
3	C 3-7
2	C 2
1	

ADD JUMPER WIRE	
A1	CR8-CAT. TO CR6-AN.
B1	CR7-CAT. TO CR5-AN.

NOTES:

1. LOCATE IN APPROXIMATE AREA SHOWN, REV LABEL (ITEM 118) AND MARK 'ASSY NO. 047-28-02-701' AND LATEST ASSY REV.
2. USE ITEM 116 (HEAT SINK COMPOUND) ON ALL COMPONENTS MOUNTED ON A HEAT SINK EXCEPT CR7,8,27,28.
3. DISCARD HARDWARE SUPPLIED WITH DIODES.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-28-03-701 REV E

ITEM NO.	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 5 STRATHMORE ROAD

P.C. BOARD ASSY
POWER SUPPLY
MOTHER BD. -701

DRAWN: [illegible] 3/6/79
DESIGN: Russ Fulbrook 7/18/79
APPROVED: Tom Read 7-20-79

SIZE D | DOCUMENT NUMBER 047-28-02 | REV H1

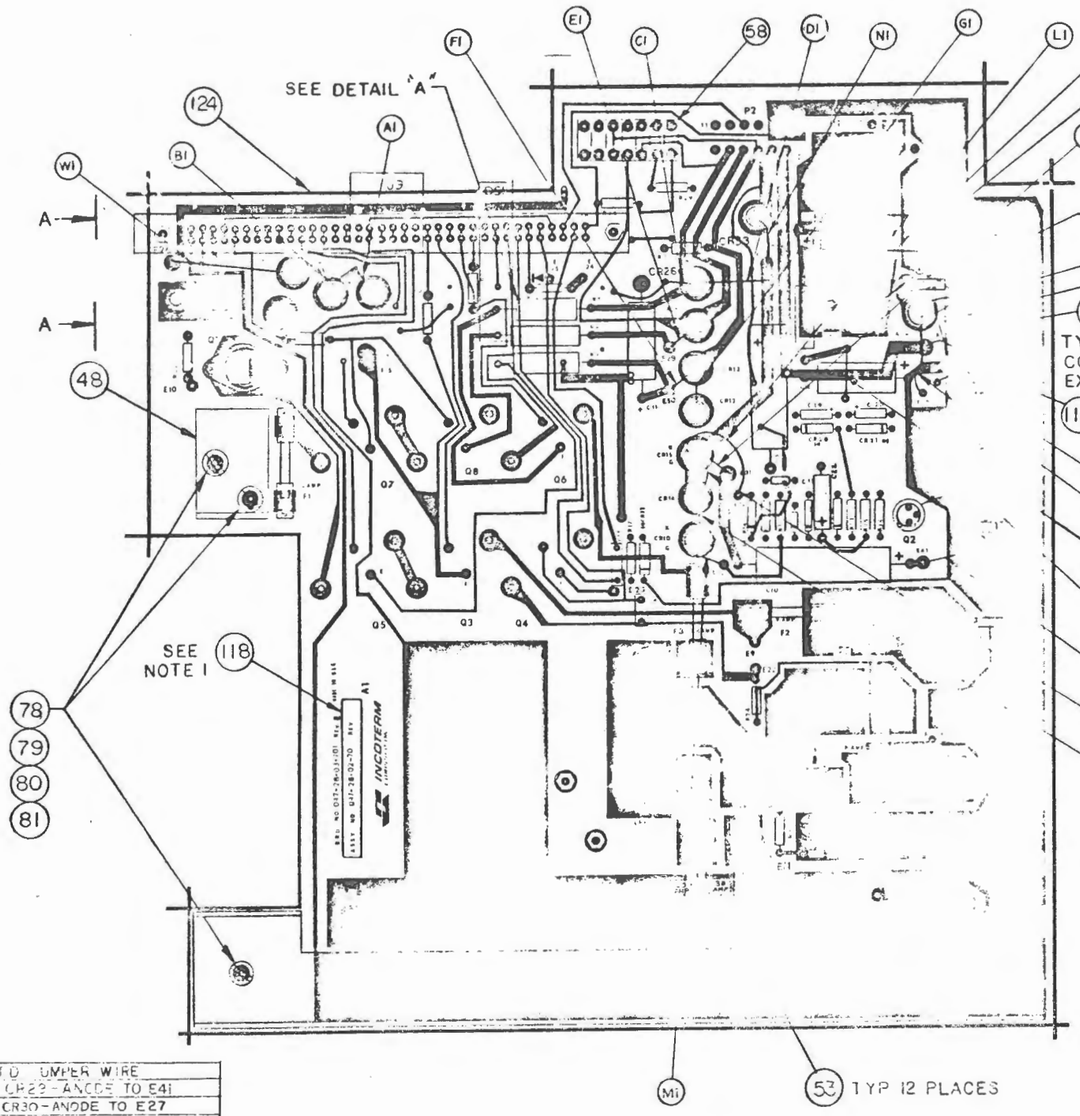
SHT 7 OF 8

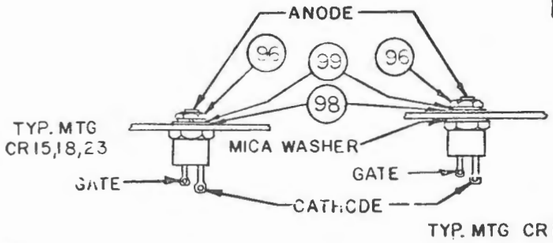
ITEM NO	REFERENCE DESIG.
136	C22
72	R19
71	R19 *
70	R19 22
69	R19 22
68	R19 22 *
67	R21,22
66	R21,22
65	R18 21 *
64	R18 21
63	R18 * 21
62	R18
61	R18
58	J2-8
52	F 4,5
51	F 2,6
50	F 1,3
37	
36	R16
35	R14
34	R13
33	R 10,12,15 17, 24, 28, 29
32	R 7,8,9
31	R 4,11
30	R 2,3,5
29	Q1
25	Q2
24	CR 24
23	CR 22
22	CR 20,21,32
21	CR 19
20	CR 17
19	CR 14
18	CR 10,15,18,23
17	CR 9
16	CR 16,26
15	CR 11
14	CR 12,13,25,29,30,31,33
13	C 19,20
12	C 18
11	C 9,12,17,21
10	C 16
8	C 14
7	C 13
6	C 11
5	C 10

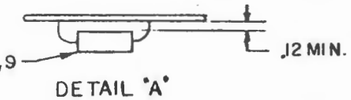
AND JUMPER WIRE	
A1	CR29 - ANODE TO E41
B1	CR30 - ANODE TO E27
C1	CR26 - ANODE TO EYELET
D1	CR26 - ANODE TO E12
E1	CR25 - ANODE TO E29
F1	CR13 - ANODE TO E30
G1	CR13 - ANODE TO CR12 - ANODE
H1	CR5 - K TO E31
J1	CR5 - K TO CR6 ANODE
K1	CR6 - ANODE TO CR10 - K
L1	CR15 - G TO E32
M1	CR10 - G TO E33
N1	CR33 - ANODE TO E35
P1	CR18 - K TO E36
Q1	CR18 - G TO E37
R1	CR19 - CATHODE TO E38
S1	CR23 - K TO CR24 ANODE
T1	CR23 - K TO E39
U1	CR23 - G TO E40
V1	CR11 - CATHODE TO E41
W1	CR31 - AN. TO E26

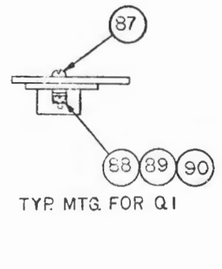
* INITIAL VALUE

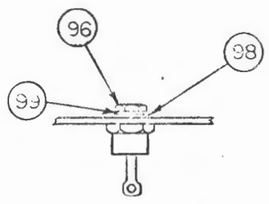
ETCH SIDE

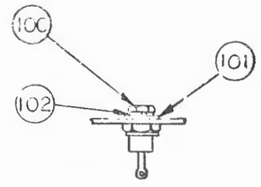












ASSEMBLE WITH ARTWORK 047 28-03-701 REV E

PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 5 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN	DATE
CHECKED Ross Fabricant	8/1/74
ENGINEER Jim Read	8/1/74
APPROVED	DATE
FIRST USED ON	

ASSY DWG — POWER SUPPLY MOTHER BD. -701

SIZE	DOCUMENT NUMBER	REV
D	047-28-02	H1

SCALE 1/1 SHT 8 OF 8

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

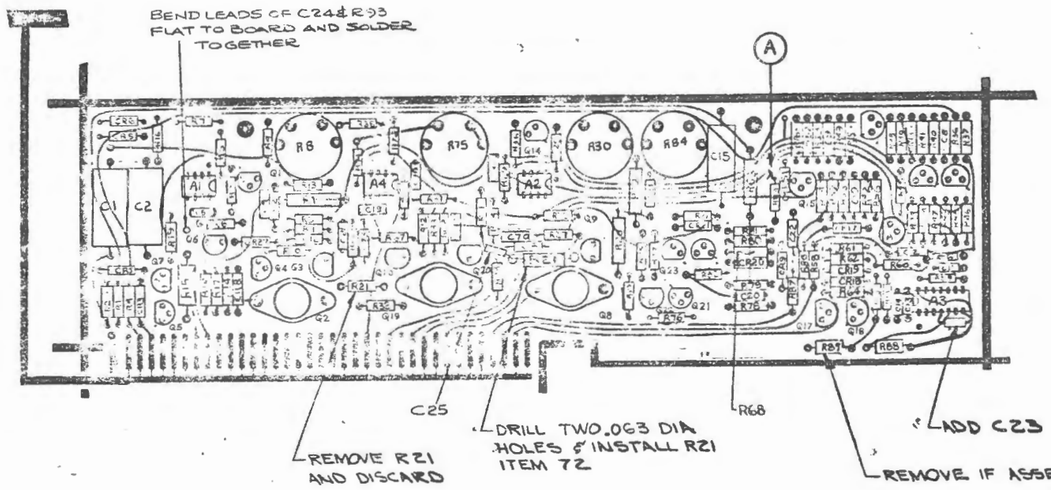
180

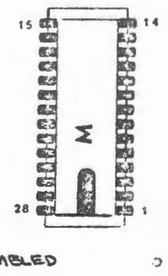
CUT ETCH FROM A1 EYELET TO P.C. ETCH

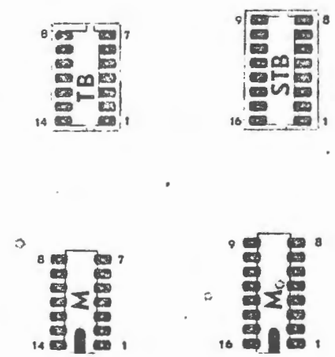
REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
B		RD 737W		
C		REVISED/ECO 3088		
D		REVISED/ECO 3088A		
E		REVISED/ECO 3253		
F		REVISED/ECO 3305		
G		REVISED/ECO 3328A		
	G1	REVISED/ECO 3304 9-13-74		
	G2	REVISED/ECO 3616		
	G3	REV/ECO 3626 12-18-74		
H		REV/ECO 3939 3/26/75		

ITEM NO	REFERENCE DESIGNATION
80	A1
79	R6
78	R81
77	R90,9
76	R90
75	R90 *
74	R90
41	R90
72	R21
67	R11
66	R11
65	R11 *
11	R11
61	R11
57	R39
55	
54	R8,30,75,84
53	R85
52	R83
51	R74
50	R73
49	R29
48	R27
47	R7
46	R6
45	R81,10
44	R79,86,93
43	
42	R55,37
41	R54 SEE NOTE 3
40	R92
39	R49
38	R47
37	R37 *
36	R37
35	R37
34	R37
33	R37
32	R36
31	R33
30	R32,68
29	R31,42,54,56,61,63,83
28	R26
27	R23,64,72, ,82, R51
26	R20,65
25	R19,38, 77,53,57,60,62,71
24	R17
23	R15
22	R14,35,48,66
21	R10, 34,40,45
20	R9,16,18,50,67
19	R5,13
18	R4,46
17	R3,25,70
16	R2,24,41,43,59,69,76,80
15	R22
14	Q3 TO 7, 11 TO 17, 23
13	U1,9,10,13,20,21,22,24
12	C12,18,19
11	CR1 TO 12, 15 TO 22, 27, 28
10	CR13
9	CR14
8	C12, C9
7	C8,10,16,22
6	C4,5,6,7,17,19,25
5	C11,13,14,18,20,21,23,24
4	C3
3	C1,2,15
2	A3
1	A1,2,4

SEE NOTE 3







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

* INITIAL VALUE

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. R11, R37 & R90 ARE MANUFACURER SELECTED RESISTOR NOMINAL VALUE FOR R11 IS ITEM 65 R90 IS ITEM 75 & R37 IS ITEM 37
3. R11, 37, 90 ARE MFG. SELECTED VALUES
4. ADD SLEEVING (ITEM 82) ON COMPONENTS AS SHOWN ON SHT 2.

ASSEMBLE USING ARTWORK 047-29-03-701 REV A

ITEM	PART NO	DESCRIPTION	QTY
82	ECSK265-1/32 CLR	SLEEVING CLR (BIRNBACH)	5 FT
81	245-02-02-001	WIRE SOL #24 AWG WHT	6 FT
55	047-29-03-701	ARTWORK REV A	1
5	C050E625J104Y	CAPACITOR 0.01 UF 100V/SPRAGUE	2

INCOTERM CORPORATION, 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

THE INFORMATION ON THIS DRAWING IS THE PROPERTY OF INCOTERM CORPORATION AND IS NOT TO BE DISCLOSED, REPRODUCED OR USED IN WHOLE OR IN PART, OR USED IN ANY MANUFACTURE FOR ANYONE OTHER THAN INCOTERM CORPORATION WITHOUT ITS CONSENT AND THAT NO RIGHT TO DISCLOSE OR TO USE SUCH INFORMATION IS GRANTED OR IMPLIED BY THE ACCEPTANCE OF THIS DRAWING.

DAUGHTER BOARD ASSEMBLY 701

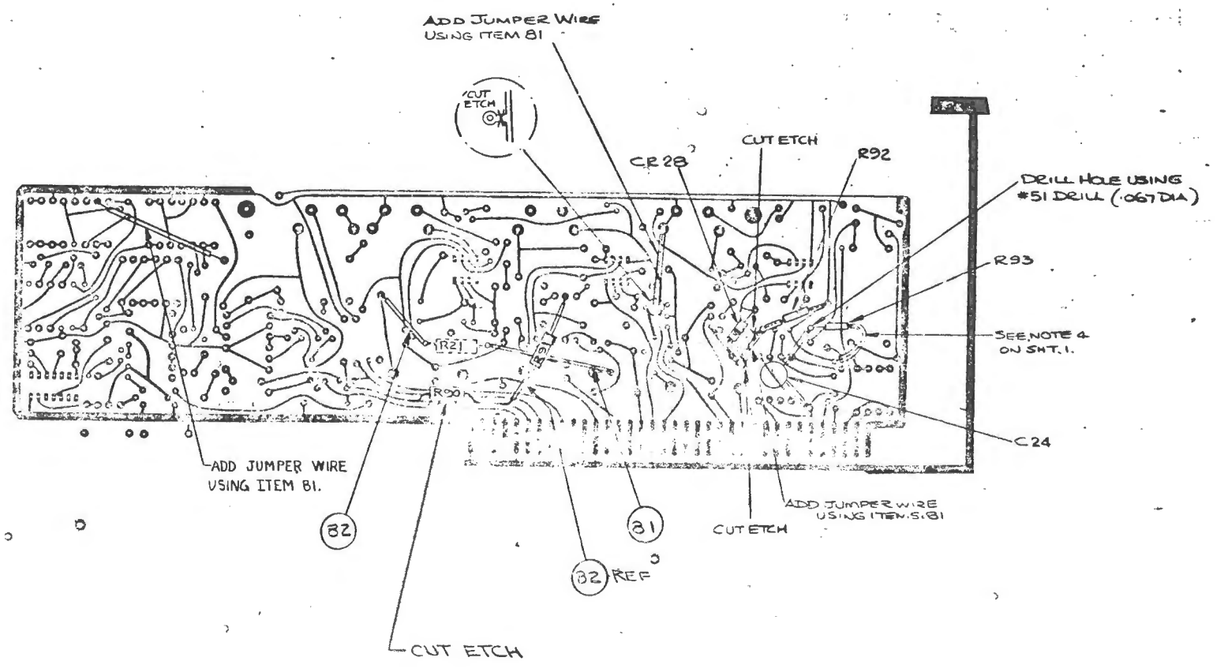
DRAWN D. Allen 3-13-75
CHECKED
ENGINEER
APPROVED
FIRST USE

DOCUMENT NUMBER D 047-29-02 REV H

SIZE A1 SCALE 1/1 SHT 1 OF 6

181

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHG	



ALL OTHERS	.040 ± .003 DIA.	
N	.187 +.003 -.000 DIA. DO NOT PLATE THRU	
M	.156 +.003 -.000 DIA DO NOT PLATE THRU	
G		
F		
E		
D		
C		
B	.062 ± .003 DIA.	
A	.052 ± .003 DIA.	
DESIGNATION	SIZE AFTER PLATING EXCEPT WHERE NOTED	QUANTITY

HOLE CHART

ETCH. SIDE

ASSEMBLE USING ARTWORK 047-29-03-701 REV-A

INCOTERM CORPORATION

ASSY DWG
CUSTER PWR SUPPLY
DAUGHTER BRD 001

D 047-29-02 H

SCALE 1-1 SHEET 2 OF 6

8 7 6 5 4 3 2 1

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	DATE	APPD

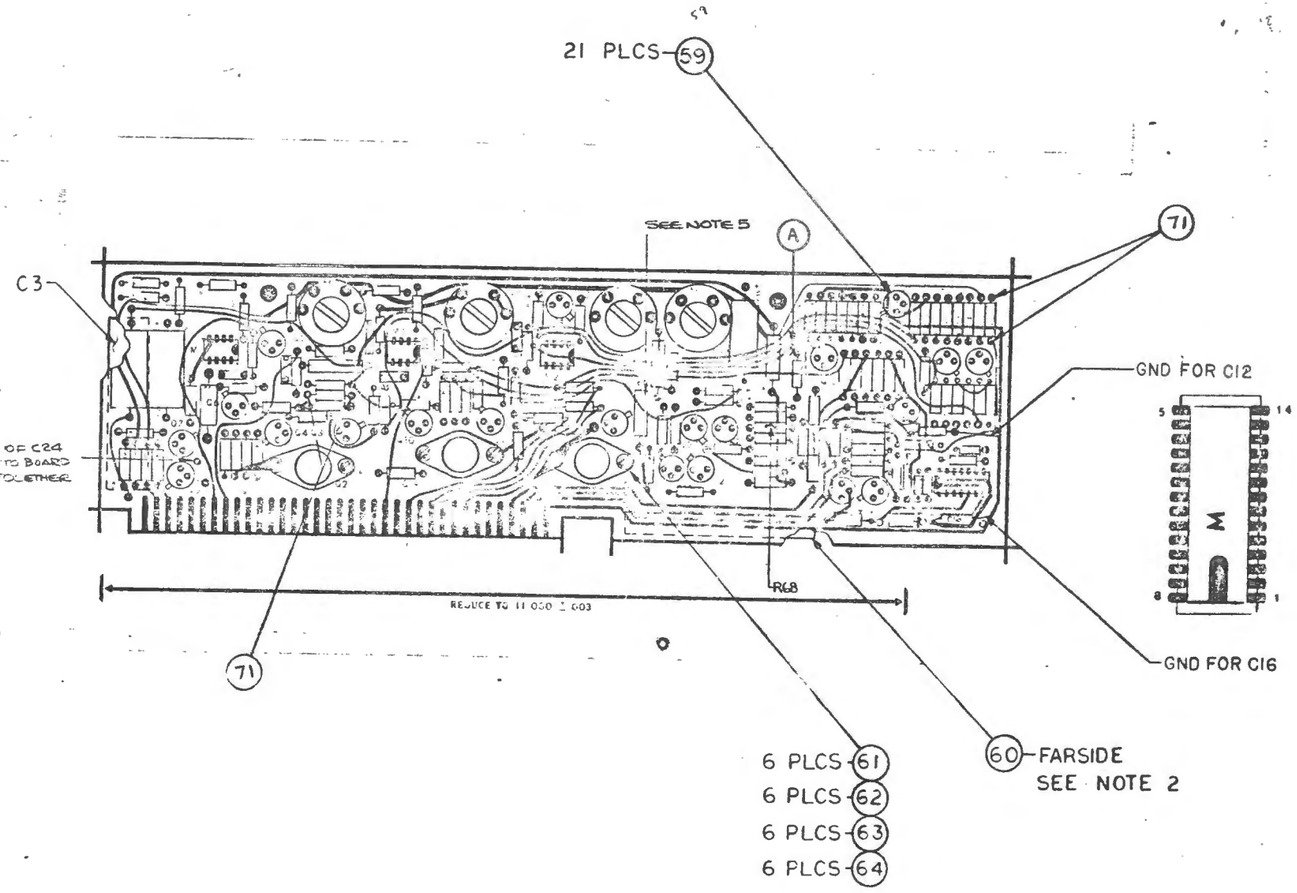
A	CUT ETCH FROM EYELET TO P.C. ECTH

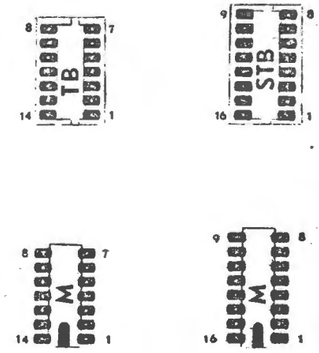
ITEM NO.	REFERENCE DESIGNATION
80	R1
79	R67
72	R21
67	R1
66	R1
65	R1
31	R1
17	R1
57	R39
56	
55	
54	R8,30,75,84
53	R85
52	R83
51	R74
50	R73
49	R79
48	R80
47	R81
46	R6
45	R7,8,93
44	
43	R55,77
42	R54,58,78
41	R52
40	R49
39	R47
38	R37 *
37	R37
36	R37
35	R37
34	R37
33	R36
32	R33
31	R32,68
30	R31,42,44,56,61,63,88
29	R26
28	R64,72,82,51,23
27	R20,65
26	R19,36,77,53,57,60,62,7
25	R17
24	R15
23	R14,35,48,66
22	R10, ,34,40,45
21	R9,16,18 50,87
20	R5,13
19	R4,46
18	R3,25,70
17	R2,24,41,43,59,69,76,80
16	R22
15	Q3-7,11-17,23
14	Q1,9,10,18,20,21,22,24
13	Q2,8,19
12	CR1-12,15-22,27,28
11	CR13
10	CR14
9	C12,9
8	C8,10,16,22
7	C4,5,6,7,17,19,25
6	C11,13,14,18,20,21,24
5	C3
4	C1,2,15
3	M3
2	M1,2,4
1	

SEE NOTE 3

SEE NOTE 3

SEE NOTE 3





PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .600 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN, REVISION LABEL ITEM 60, AND MARK ASSY NO. 047-29-02-701 AND LATEST REV NO.
3. R11, 37, 90 ARE MFG. SELECTED PARTS
   * = INITIAL VALUE
4. ADD SLEEVING ITEM 82 ON COMPONENTS AS SHOWN ON SHEET 4.
5. DELETE DUPLICATE MARKING OF R22 FROM BOARD WHERE SHOWN

ASSEMBLE WITH ARTWORK 047-29-03-701 REV C

ITEM	PART NO.	DESCRIPTION	QTY
55	047-29-03-701	ARTWORK REV C	1

INCOTERM CORPORATION
4 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is to be used for the express purpose for which it is lent to be disclosed, reproduced or used, in whole or in part, for any other purpose without the written consent of INCOTERM Corp. which in that event reserves all its rights to damages and other legal remedies.

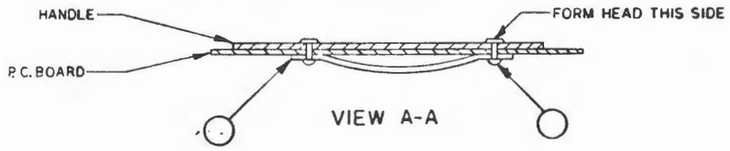
DRAWN	J.M. McGuire	9-16-73
CHECKED	[illegible]	9/16/73
ENGINEER	[illegible]	9/14/73
APPROVED		DATE

ASSY DRAWING
POWER SUPPLY
DAUGHTER -701

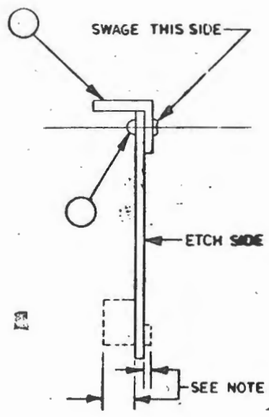
DOCUMENT NUMBER	REV
047-29-02	H

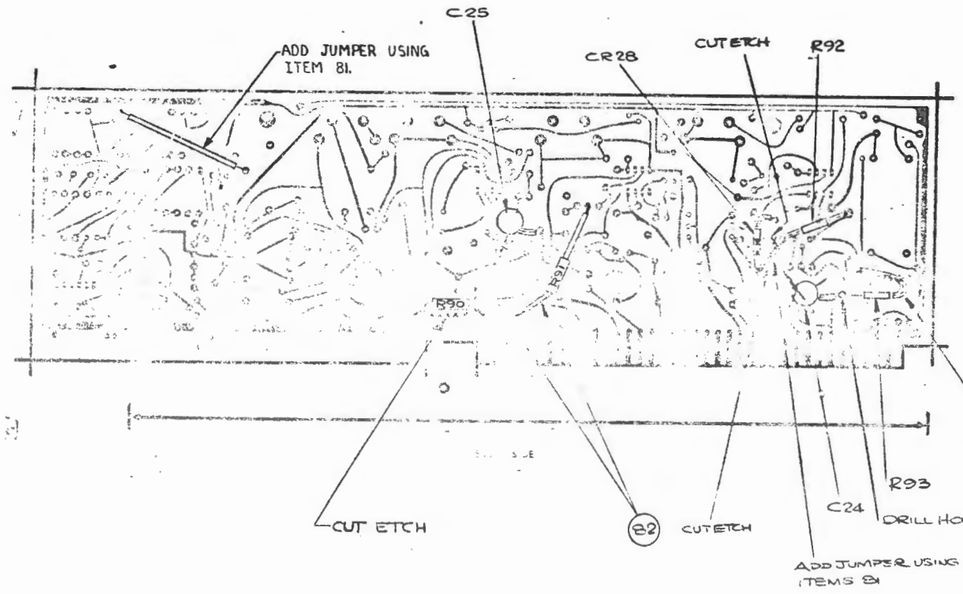
NEXT USED ON | SHT 1-1 | SHT 3 OF 6

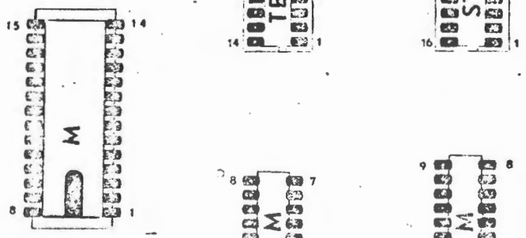
REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD



VIEW A-A







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.

SEE NOTE 3

ITEM NO.	REFERENCE DESIGNATION
41	R90
78	R91
77	R90, R92
76	R90
75	R90*
74	R90

ASSEMBLE WITH ARTWORK 047-29-03-701 REV C.

INGOT RM CORPORATION

BOARD ASSY DAUGHTER BOARD

701

047-29-02 H

4 OF 6

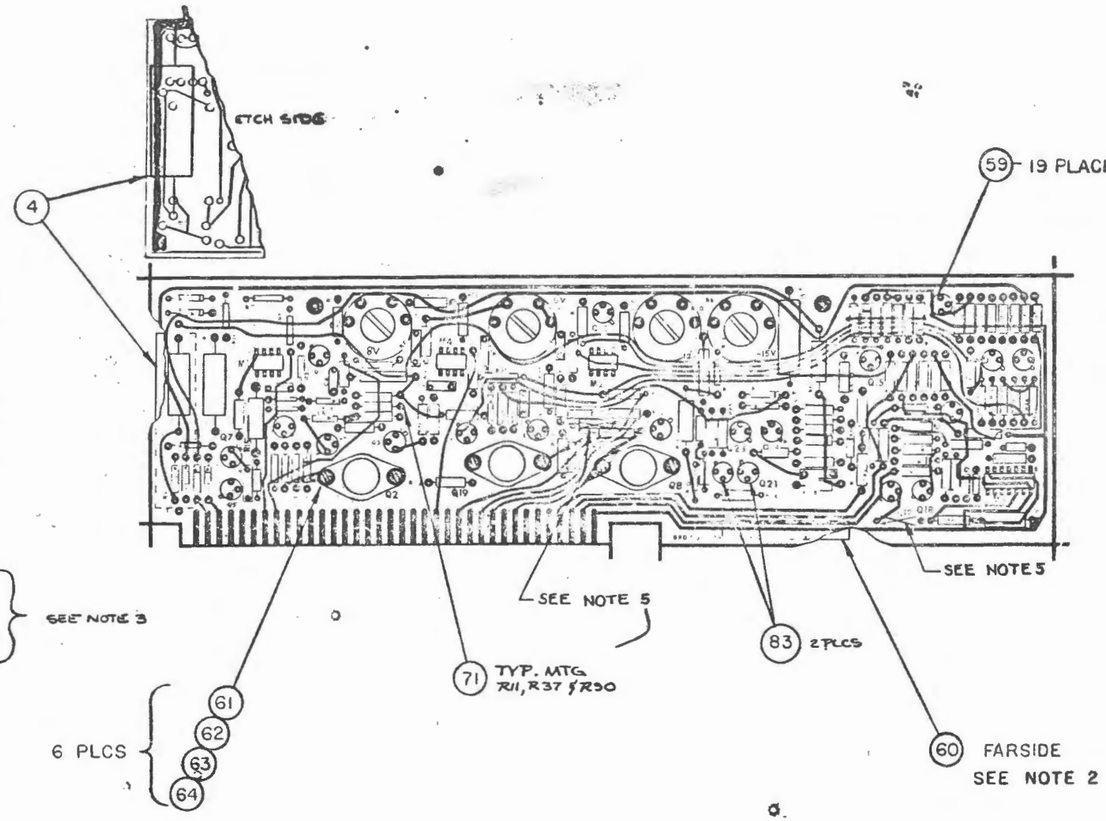
ITEM NO.	REFERENCE DESIGNATION
80	R1
79	R91
77	R92
76	R90
75	R37 *
74	R90
73	
72	R91
71	
70	
69	
68	
67	R11
66	R11
65	R11 *
64	
63	
62	
61	
60	
59	
58	
57	R89
56	
55	
54	R8,30,75,84
53	R85
52	R83
51	R74
50	R73
49	R23
48	R27
47	R7
46	R6
45	R2
44	R79,86,88
43	
42	R55
41	R54,58,78,
40	R52
39	R49
038	R47
37	R37 *
36	R37
35	R37
34	R37
33	R37
32	R36
31	R33
30	R32,68
29	R31,42,44,56,61,63,67,88
28	R26
27	R23,51,64,72,82
26	R20,65
25	R19,38,53,57,60,62,71,77
24	R17
23	R15
22	R14,35,48,66
21	R10,39,40,45
20	R9,16,18,50,87
19	R5,13
18	R4,46
17	R3,25,70
16	R2,24,41,43,59,69,76,80
15	R22
14	R1-7,11-17,21
13	C1,9,10,18,20,21,22,24
12	C2,8,19
11	CR1-12,15-22,27,28
10	CR13
9	CR14
8	C9,12
7	C8,10,16,22
6	C4,5,6,7,17,19,25
5	C11,13,14,18,20,21,24
4	C3
3	C1,2,15
2	M3
1	M1,2,4

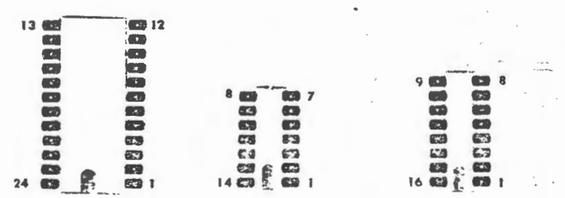
SEE NOTE 3

SEE NOTE 3

SEE NOTE 3

ITEM NO.	REFERENCE DESIGNATION
88	R11
87	R11
86	R37
85	R90
84	R90





PIN NUMBERING
AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .600 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 60, AND MARK ASSY NO. 047-29-02-701 AND LATEST ASSY REVISION.
3. R11, 37, 90 ARE MFG. SELECTED PARTS
   * = INITIAL VALUE
4. ADD SLEEVING, ITEM 82, ON COMPONENTS AS SHOWN ON SHEET 4.
5. LOCATIONS MARKED X ARE OPTIONAL USE R28 AND R89

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 047-29-03-701 REV D

INCOTEAM CORPORATION

P.C. BOARD ASSY
POWER SUPPLY
DAUGHTER BD -701

M.D. 8/1/74

047-29-02 H

FULL 5 OF 6

ITEM NO.	REFERENCE DESIGNATION
80	R1
78	R91
77	R92
76	R90
75	R90 *
74	R90
73	
72	R21
71	
70	
69	
68	
67	R11
66	R11
65	R11 *
64	
63	
62	
61	
60	
59	
58	
57	R39
56	
55	
54	R8,30,75,84
53	R85
52	R83
51	R74
50	R73
49	R29
48	R27
47	R7
46	R6
45	R12,81
44	R79,86,93
43	
42	R55
41	R54,58,78,
40	R52
39	R49
38	R47
37	R37 *
36	R37
35	R37
34	R37
33	R37
32	R36
31	R35
30	R32,68
29	R31,42,44,56,61,63,67,89
28	R26
27	R25,51,64,72,82
26	R20,65
25	R9,36,53,57,60,62,71,77
24	R17
23	R15
22	R14,35,48,66
21	R10,34,40,45
20	R9,16,8,50,87
19	R5,13
18	R4,46
17	R3,25,70
16	R2,24,41,43,59,69,76,80
15	R22
14	Q3-7,11-15
13	Q1,9,10,16,20,21,22,24
12	Q2,8,19
11	CR1-12,15-22,27,28
10	CR13
9	CR14
8	C9,12
7	C8,10,16,22
6	C4,5,6,7,17,19,25
5	C11,13,14,18,20,21,24
4	C3
3	C1,2,15
2	M3
1	M1,2,4

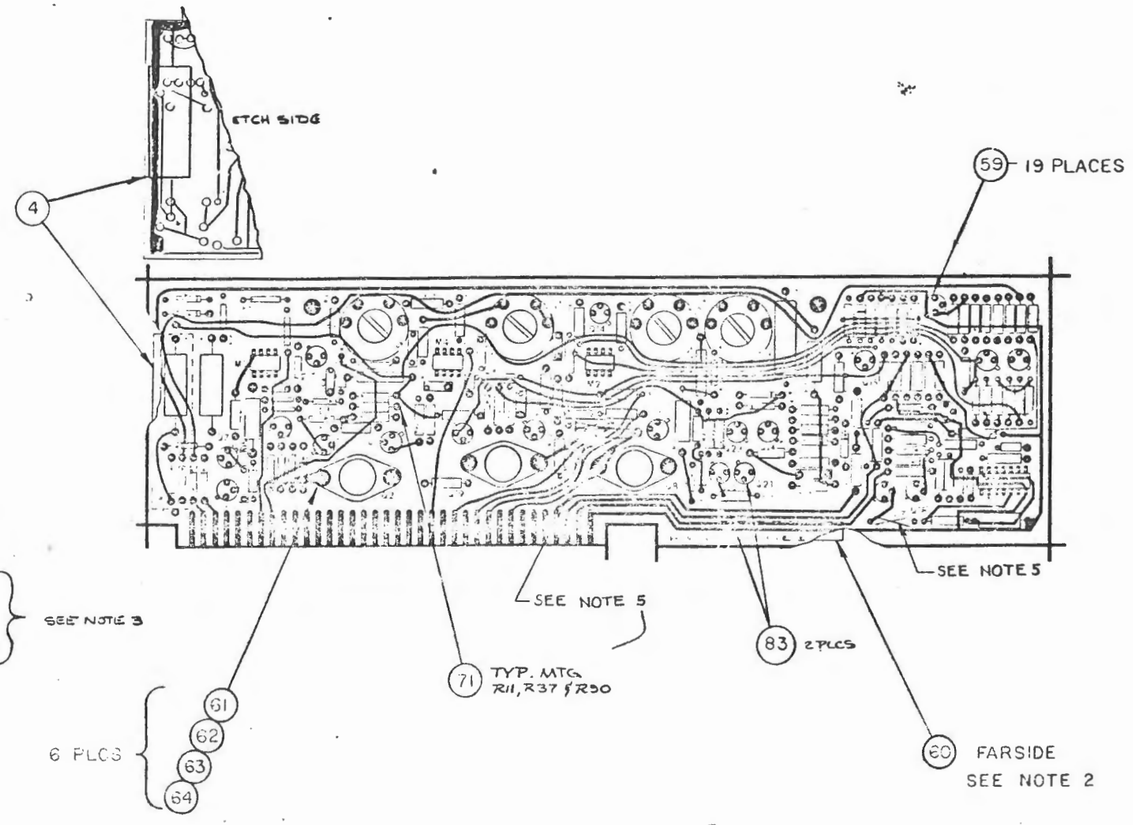
SEE NOTE 3

SEE NOTE 3

ITEM NO.	REFERENCE DESIGNATION
88	R11
87	R11
86	R37
85	R30
84	R90

SEE NOTE 3

SEE NOTE 3



PIN NUMBERING

AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .600 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 60, AND MARK ASSY NO. 047-29-02-701 AND LATEST ASSY REVISION.
3. R11, 37, 90 ARE MFG. SELECTED PARTS
   * = INITIAL VALUE
4. ADD SLEEVING, ITEM 82, ON COMPONENTS AS SHOWN ON SHEET 4.
5. LOCATIONS MARKED X ARE OPTIONAL USE R28 AND R89

COMPONENT SIDE

ASSY IN ACCORDANCE WITH ART WORK 047-29-03-701 REV E

P.C. BOARD ASSY
POWER SUPPLY
DAUGHTER BD -701

047-29-02 H

SHEET 6 OF 6

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RD# 737W		
B		REVISED/ECO 3088 4/10/74		
C		REVISED/ECO 3216 5/6/74		
D		REVISED/ECO 3222 5/9/74		
E		REVISED/ECO 3236 5/9/74		
F		REVISED/ECO 3251 6/6/74		
G		REVISED/ECO 3253 6/9/74		
H		REVISED/ECO 3305 7/5/74		
J		REVISED/ECO 3321 8/12/74		
K		REVISED/ECO 3323A 8/27/74		
L		UPDATED/ECO 3337 8/27/74		
M		REVISED/ECO 3304 9/4/74		
N		REVISED/ECO 3350 9/3/74		
P		REVISED/ECO 3303 10/4/74		
R		REVISED/ECO 3616		
S		REV/ECO 3669 12-30-74		
T		REV/ECO 3939 3-25-25		

NOTES:

1. UNLESS OTHERWISE SPECFIED:
   A. ALL RESISTOR VALUES ARE IN OHMS AND ARE 1/2W, ±5%, UNLESS SPECIFIED OTHERWISE.
   B. ALL CAP VALUES ARE IN MICRO FARADS (SH2,3)

   D. ALL DIODES ARE IN4003 SHEET3

   F. ALL TRANSISTORS ARE 2N1711. (SHEET 3)
2. MFG SELECTED FOLDBACK RES VALUES ARE (SHEET 2)
   A. R18-75Ω; MAY ALSO BE: 51, 62, 82, 91Ω
   B. R19-180Ω; MAY ALSO BE: 120, 130, 150, 200Ω
   C. R21-91Ω; MAY ALSO BE: 75, 82, 100, 110Ω
   D. R22-120Ω; MAY ALSO BE: 110, 130, 150, 100Ω
   } 1/4W, 5%
3. MFG SELECTED FOLDBACK RES VALUES ARE (SH3)
   A. R11-75Ω, MAY ALSO BE 62, 68, 82, 91.
   B. R90-330, MAY ALSO BE 270, 300, 360, 390.
   C. R37-100K, MAY ALSO BE 130K, 150K, 200K, 300K & 620K Ω
4. SEE CAP. SPEC. NO. 905-01-04-002 FOR VALUE RANGE.
5. SEE CAP. SPEC. NO 905-01-04-004 FOR VALUE RANGE

A1 HEAT SINK ASSY (SH2)

HIGHEST REF DES USED					
R 4	C	CR	VR	Q 4	M
REF. DES. NOT USED					

A2 HEAT SINK ASSY (SH2)

HIGHEST REF DES USED					
R 4	C	CR	VR	Q 4	M
REF. DES. NOT USED					

MOTHER BOARD (SHT 2)

HIGHEST REF. DES. USED					
R 29	C 22	CR 33	VR	Q 8	M
REF. DES. NOT USED					
R23,25,26,27,1,6,20					

DAUGHTER BOARD (SHT. 3)

HIGHEST REF. DES. USED					
R 93	C 25	CR 28	VR	Q 24	M 4
REF. DES. NOT USED					
CR23, CR24, CR25, CR26					

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION — 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

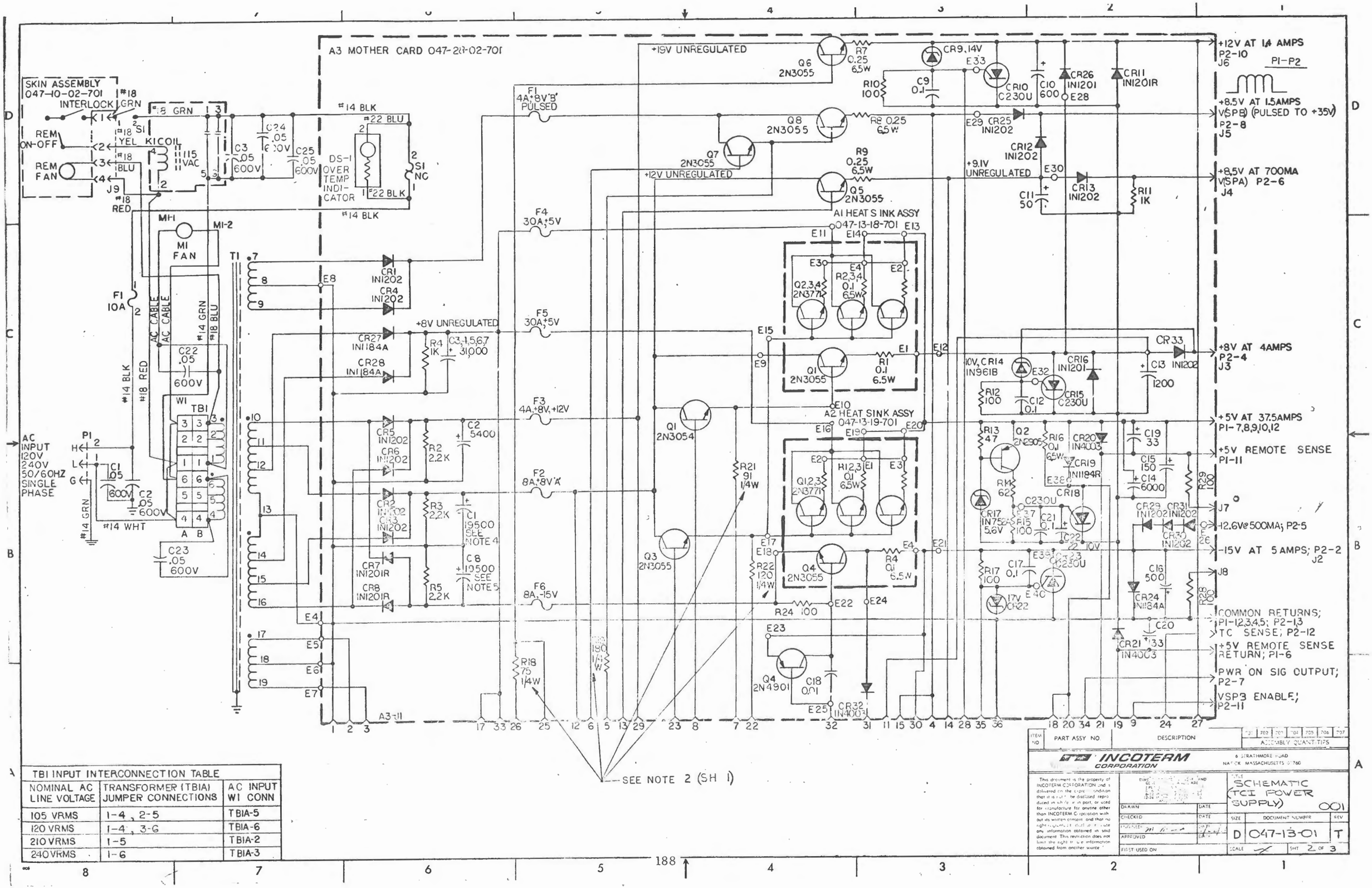
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation, without its written consent, and that no right is granted to disclose or to use any information contained in said document. The recipient agrees not to limit the right to use information obtained from another source.

DRAWN: Carl Taylor DATE
CHECKED: DATE
ENGINEER: DATE
APPROVED: DATE
RELEASED ON C47-15-26-P01 DATE

SCHEMATIC
TCI POWER SUPPLY
001

SIZE	DOCUMENT NUMBER	REV
D	C47-13-01	T

SHT 1 OF 3



TBI INPUT INTERCONNECTION TABLE		
NOMINAL AC LINE VOLTAGE	TRANSFORMER (TBIA) JUMPER CONNECTIONS	AC INPUT W1 CONN
105 VRMS	1-4, 2-5	TBIA-5
120 VRMS	1-4, 3-6	TBIA-6
210 VRMS	1-5	TBIA-2
240 VRMS	1-6	TBIA-3

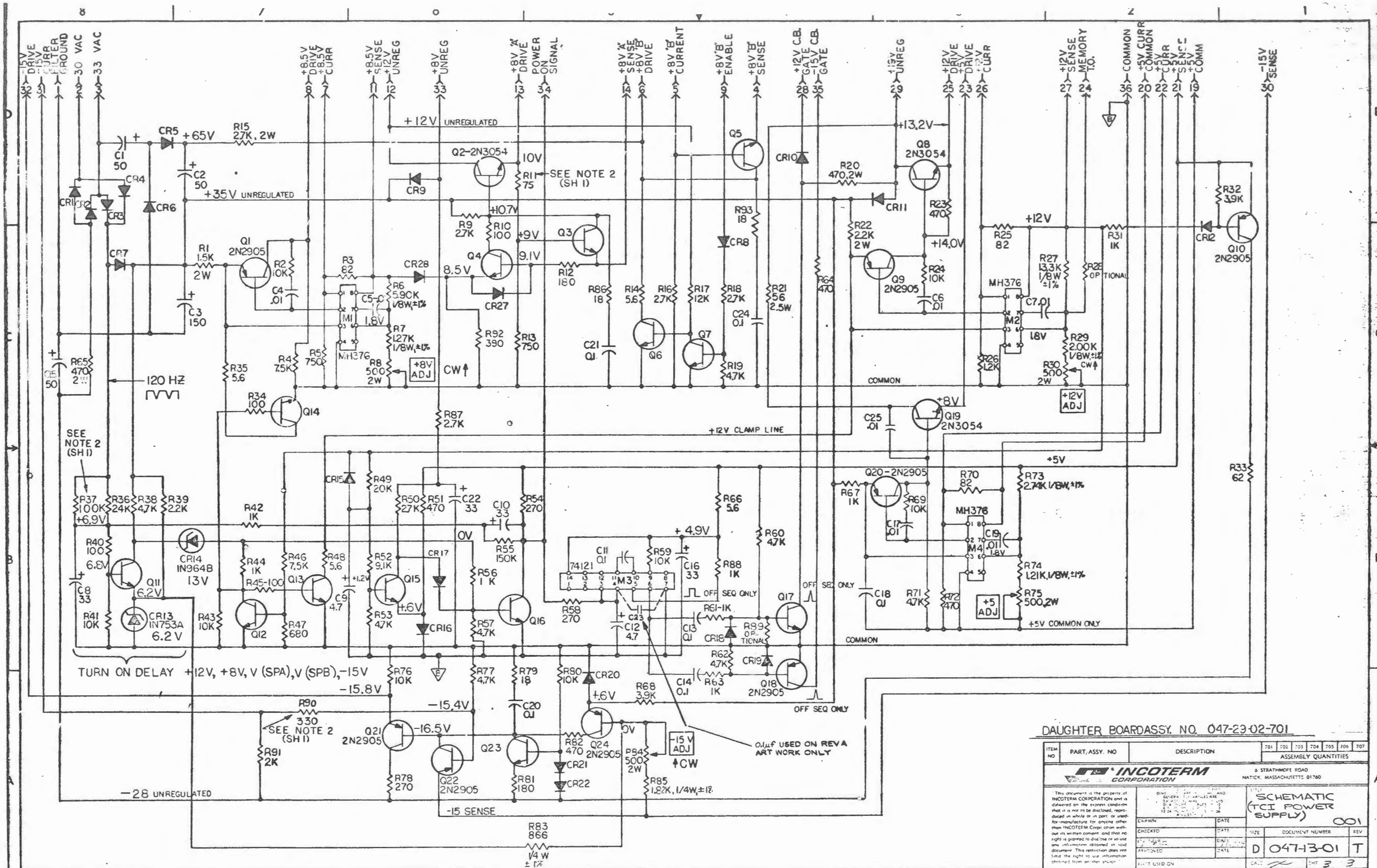
ITEM NO	PART ASSY NO.	DESCRIPTION	ASSEMBLY QUANTITIES
			701 702 703 704 705 706 707

INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is conveyed to use any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE
FIRST USED ON

TITLE: SCHEMATIC (TCI POWER SUPPLY) 001
SIZE D | DOCUMENT NUMBER 047-13-01 | REV T
SCALE | SHT 2 OF 3



DAUGHTER BOARDASSY. NO. 047-23-02-701

ITEM NO	PART, ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from other sources.

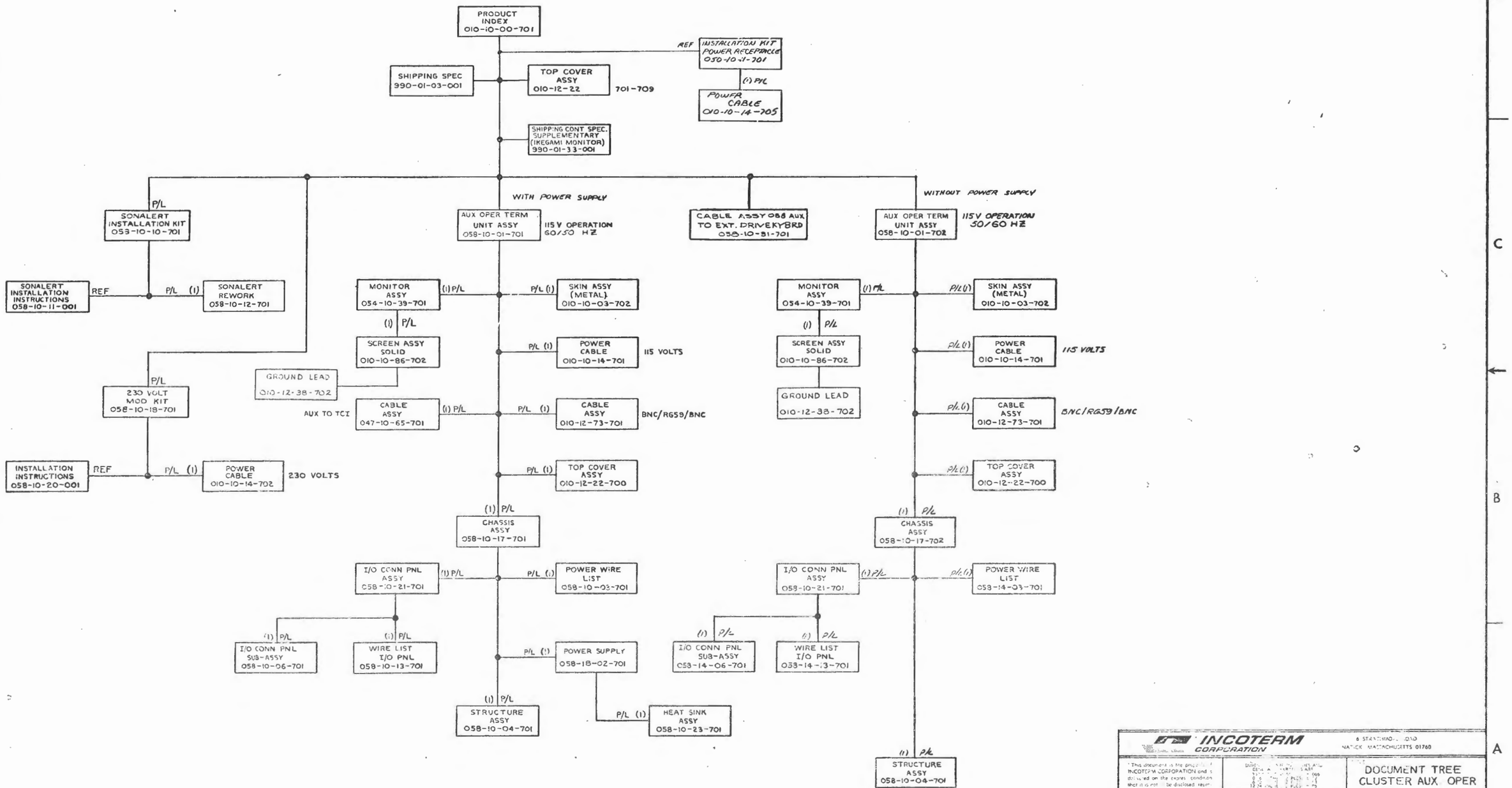
DRAWN DATE
CHECKED DATE
APPROVED DATE
NEXT USED ON

SCHEMATIC (TCI POWER SUPPLY) 001

SIZE D | DOCUMENT NUMBER 047-13-01 | REV T

DATE SHT 3 3

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
F		REVISED & REDRAWN/ECO 3420		
G		REVISED/ECO 3461 11/21/74		
H		REV/ECO 3644 12-6-74		
J		REV/ECO 3634 12-11-74		
K		REVISED/ECO 3801 1/15/75		
L		REVISED/ECO 3877 2-17-75		



INCOTERM CORPORATION
8 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is disclosed on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN L. SWANSON 7-3-74
CHECKED D. VOGEL 7/11/74
ENGINEER D. VOGEL
APPROVED R. MARCHANT

DOCUMENT TREE
CLUSTER AUX. OPER TERM 001

SIZE	DOCUMENT NUMBER	REV
D	058-10-00	L

SCALE NONE SHT 1 OF 2

FIRST USED ON 010-10-00-701

PRODUCT INDEX 010-10-00-701

SHIPPING SPEC 990-01-03-001

TOP COVER ASSY 010-12-22-701-108

REF INSTALLATION KIT POWER RECEPTACLE 050-10-11-701

SHIPPING CONT. SPEC. SUPPLEMENTARY (TEKAMI MONITOR) 990-01-35-001

(1) P/L

POWER CABLE 010-10-14-705

WITH POWER SUPPLY (3PL™ SCREEN APPLICATION)

SCNALERT INSTALLATION 058-10-11-001

230V MOD KIT 058-10-18-701

AUX OPER TERM UNIT ASSY 058-10-01-701 115V OPERATION 50/60 HZ

CABLE ASSY 058 AUX TO EXT DRIVE KEYBOARD 058-10-31-701

AUX OPER TERM UNIT ASSY 058-14-01-701 115 V OPERATION WITH EXTERNAL ALARM RELAY DRIVER 50/60 HZ

(REF) SCNALERT INSTALLATION INSTRUCTION 058-10-11-001

P/C (1) SCNALERT REWORK 058-10-12-701

MONITOR ASSY 054-10-39-701 (1) P/L

(1) P/L SKIN ASSY (METAL) 010-10-03-702

(1) P/L SCREEN ASST SOLID 010-10-86-702

(1) P/L POWER CABLE 010-10-14-701 115 V

GROUND LEAD 010-12-38-702

AUX TO TCI CABLE ASSY 047-10-65-701 (1) P/L

(1) P/L CABLE ASSY 010-12-73-701 BNC/RG59/BNC

MONITOR ASSY 054-10-39-701 (1) P/L

P/L(1) SKIN ASSY (METAL) 010-10-03-702

(1) P/L SCREEN ASSY SOLID 010-10-86-702

P/L(1) POWER CABLE 010-10-14-701 115 VOLTS

AUX TO TCI CABLE ASSY 047-10-65-701

P/L(1) CABLE ASSY 010-12-73-701 BNC/RG59/BNC

(REF) INSTALLATION INSTRUCTION 058-10-20-701

P/L(1) POWER CABLE 010-10-19-702

(1) P/L TOP COVER ASSY 010-12-22-700

P/L(1) TOP COVER ASSY 010-12-22-700

(1) P/L CHASSIS ASSY 058-16-17-701

(1) P/L CHASSIS ASSY 058-14-17-701

I/O CONN. PNL ASSY 058-10-21-703 (1) P/L

(1) P/L POWER WIRE LIST 058-16-03-701

(1) P/L TRANSFORMER ASSY 058-16-22-701

I/O CONN PNL ASSY 058-10-21-702 (1) P/L

P/L(1) POWER WIRE LIST 058-14-03-701

(1) P/L I/O CONN PNL SUB-ASSY 058-16-06-701

(1) P/L WIRE LIST I/O PNL 058-16-13-701

(1) P/L POWER SUPPLY P.C. BRD ASSY 058-17-02-701

(1) P/L I/O CONN PNL SUB-ASSY 058-14-06-701

(1) P/L WIRE LIST I/O PNL 058-14-13-701

P/L(1) POWER SUPPLY 058-18-02-703

P/L(1) P.C. BOARD ASSY 058-13-02-701

STRUCTURE ASSY. 058-10-04-703

(1) P/L HEAT SINK ASSY 058-17-25-701

RELAY BRD ASSY 058-15-02-701 (1) P/L

(1) P/L STRUCTURE ASSY 058-10-04-702

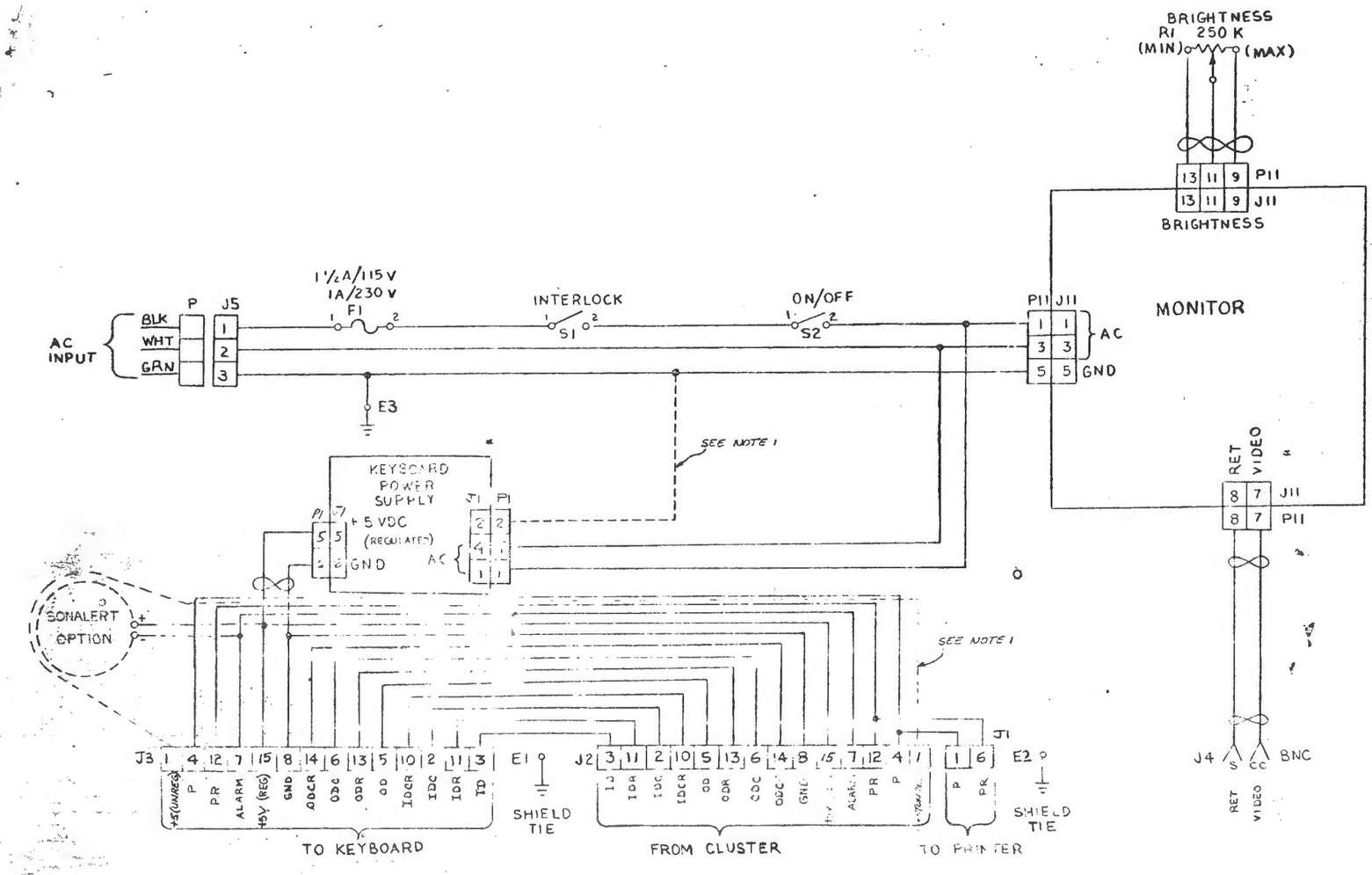
INCOTERM CORPORATION 8 LEATHERMINE ROAD WATERTOWN, MASSACHUSETTS 02160

DOCUMENT TREE CLUSTER AUX OPER. TERM 001

D 058-10-00 L

SHT 2 2

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RELEASED / ECO 2792	[illegible]	[illegible]
B		CHANGE PRIOR TO RELEASE	[illegible]	[illegible]
C		REVISED / ECO 2792 [illegible]	[illegible]	[illegible]
D		REVISED / ECO 2886 3-26-79	[illegible]	[illegible]
E		REVISED / ECO 3022 4/5/79	[illegible]	[illegible]
F		REVISED / ECO 3052 4/19/79	[illegible]	[illegible]
G		REVISED / ECO 3298 [illegible]	[illegible]	[illegible]



NOTES:
1. ITEMS IN PHANTOM (---) MAY EXIST IN EARLIER MODELS

PART ASSY NO.	DESCRIPTION

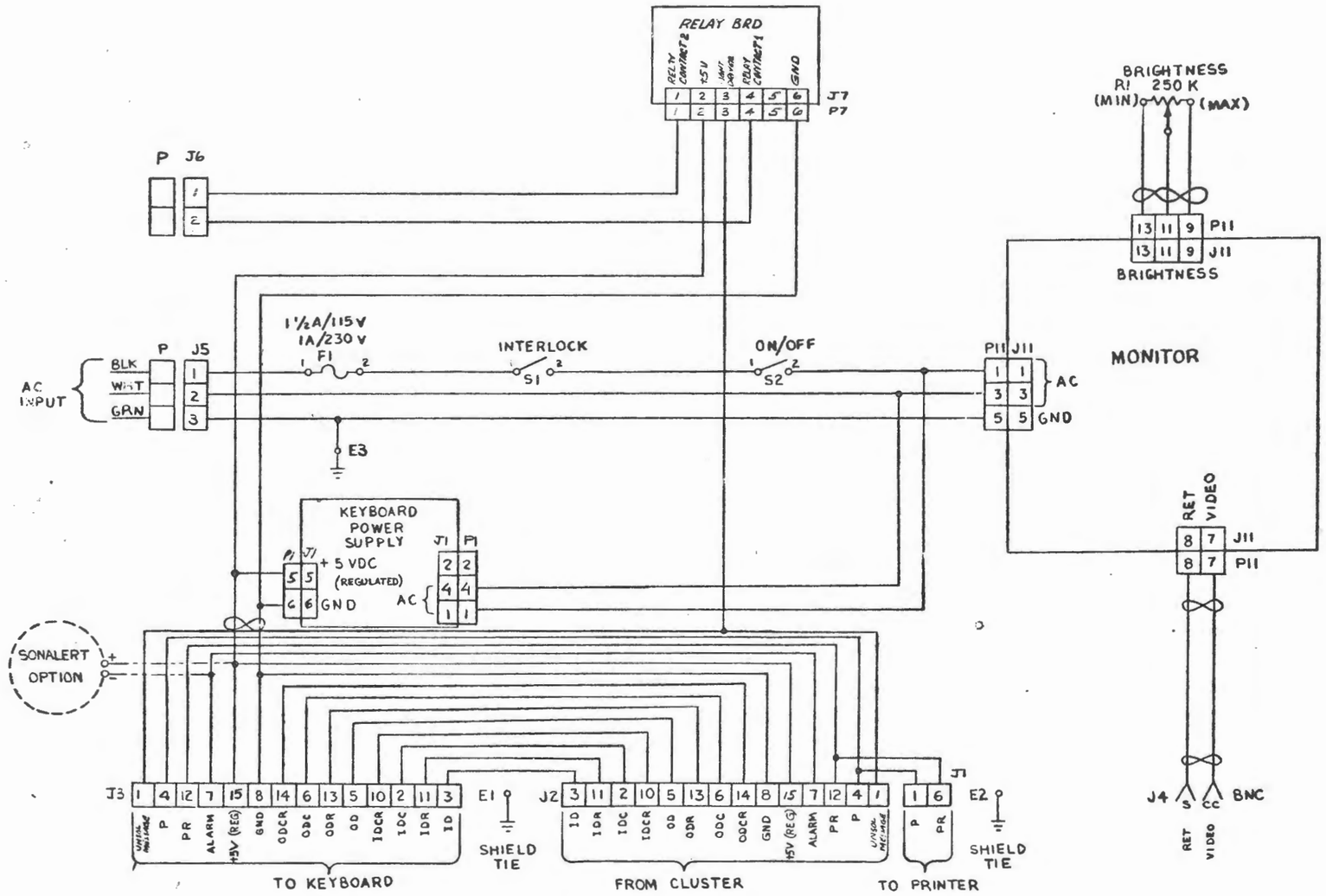
INTERM CONTROLS CORP.

POWER WIRE SCHEMATIC 001

D 058-10-02 G

SHEET 1 OF 1

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	DWN	APPD
A	RELEASED TO PRD #23296		



ITEM NO	PART/ASSY NO.	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN	D Vogel	10/5/83
CHECKED		10/27/83
ENGINEER		
APPROVED		
FIRST USED ON	058-14-01-701	

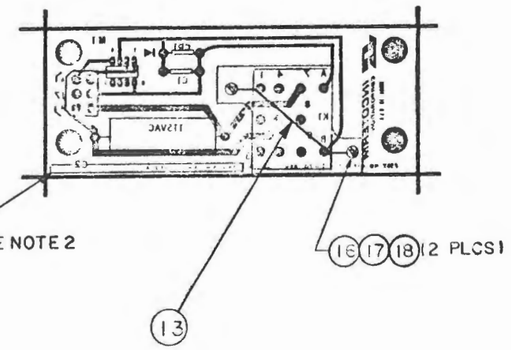
TITLE: POWER WIRE SCHEMATIC 001

SIZE	DOCUMENT NUMBER	REV
D	058-14-02	A

SCALE NA SHT 1 OF 1

REVISION HISTORY				
			CHK	APPD
A		RELEASED/RD737AG	[illegible]	[illegible]
	A1	REV CHG 3460 10-31-79	[illegible]	

ITEM NO.	REFERENCE DESIGNATION
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	
27	
26	
25	
24	
23	
22	
21	
20	
19	
18	
17	
16	
15	J7
14	M1
13	
12	
11	K1
10	CR1
9	C2
8	C1
7	
6	
5	
4	
3	
2	
1	



4 1
5 8

PIN NUMBERING
AND ORIENTATION

NOTES:
1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 6
   AND MARK ASSY NO.058-15-03-701 AND LATEST ASSY REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 058-15-03-701 REV A

ITEM NO.	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION

"This document is the property of INCOTERM CORPORATION and is loaned on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and it at no right is granted to disclose or use any information obtained in this document. This restriction does not limit the right to use information obtained from another source."

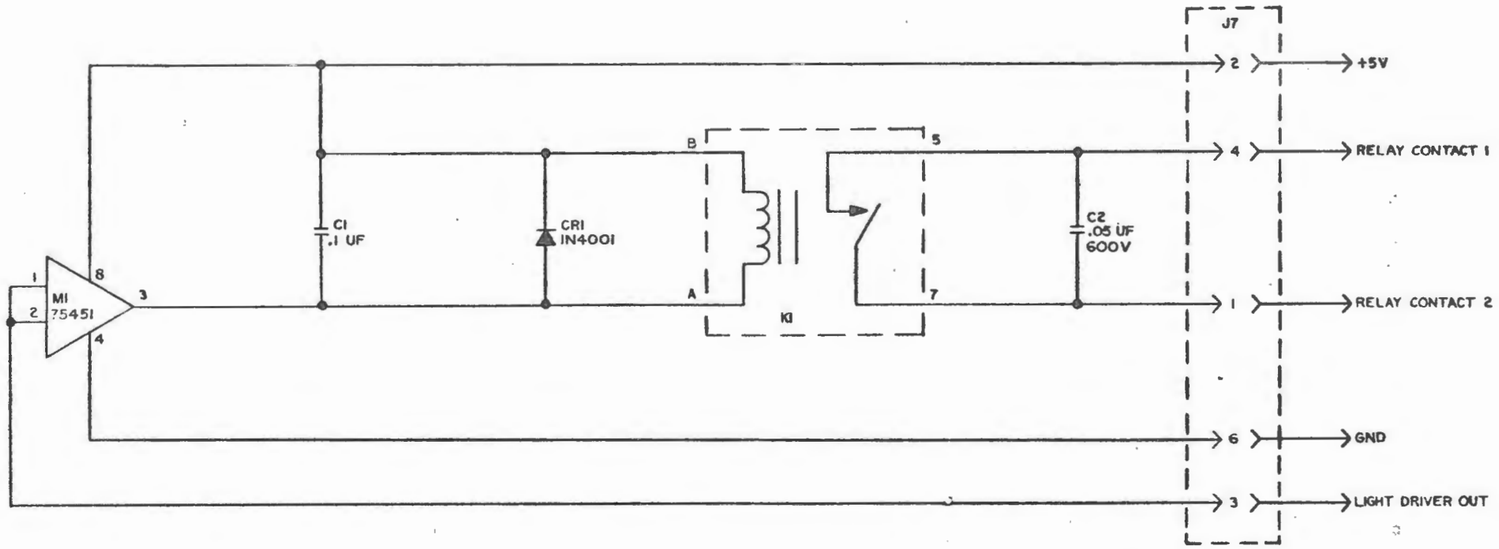
P.C. BOARD ASSY
RELAY BOARD
701

DRAWN Ron Jenkins 7/15/74
CHECK Carl Knack 8/5/74
ENGR Carl Knack 8/5/74

SIZE	DOCUMENT NO.	REV
D	058-15-02	A1

FIRST USED ON 058-14-17-701 SCALE 4 SHT 1 OF 1

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
A	RELEASED 7374A		



INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND TOLERANCES ARE
2 PLACE DECIMAL ± .005
3 PLACE DECIMAL ± .010
FRACTIONS ± 1/64
ANGLES ± 1°

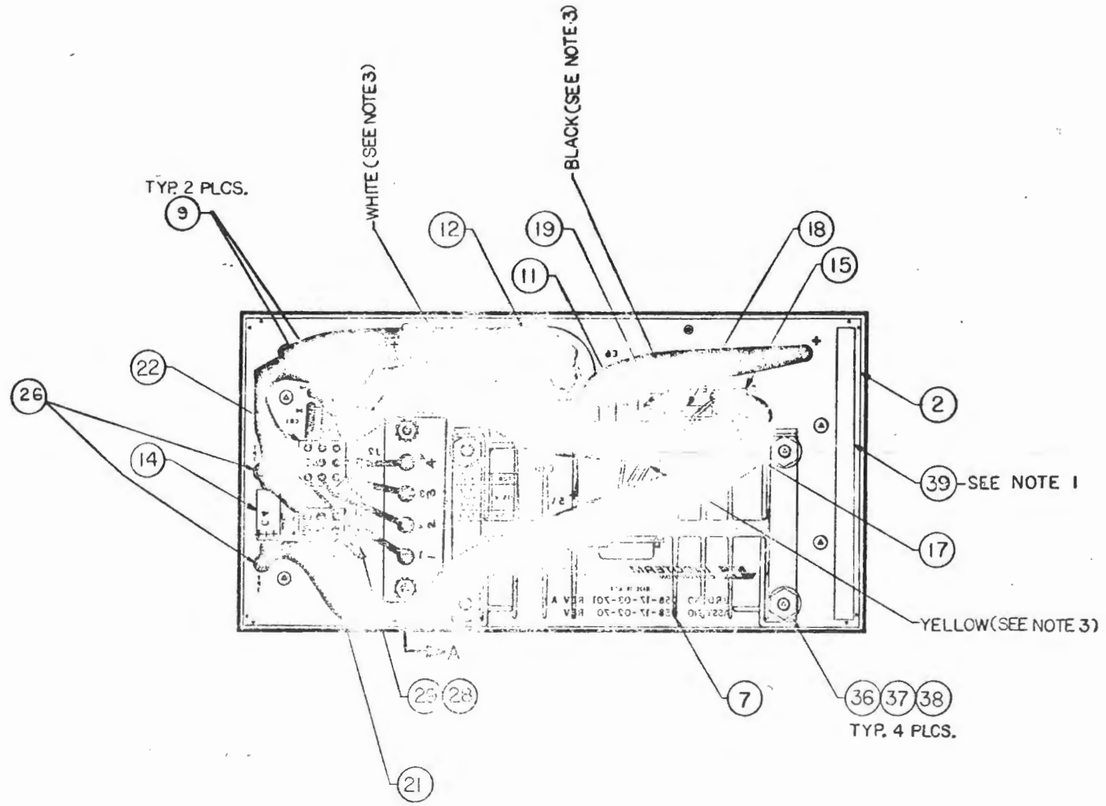
DRAWN	T. Gilberg	DATE 5-8-74
CHECKED		DATE
ENGINEER		DATE
APPROVED		DATE
FIRST USED ON		

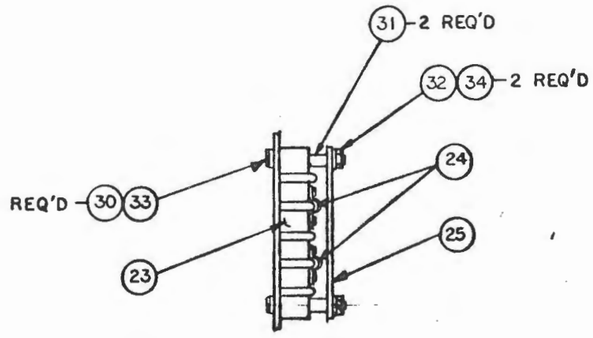
TITLE: SCHEMATIC DRAWING RELAY BOARD -001

SIZE	DOCUMENT NUMBER	REV
D	058-15-01	A

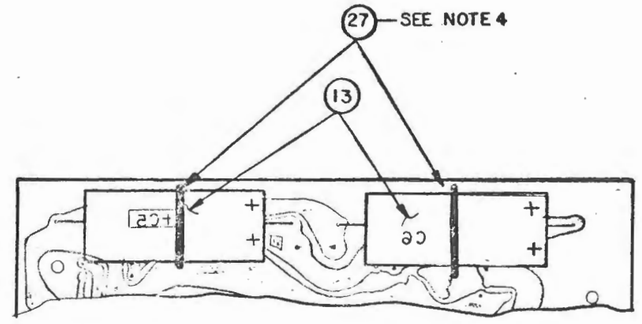
SCALE NONE SHT 1 OF 1

REVISION HISTORY				
REV		DESCRIPTION OF CHANGE	CHK	APPD
A		RELEASE/RD 8100		





SECTION A-A



OPTIONAL ASSY WHEN C1 (ITEM 12)
IS REPLACED BY C5 & C6 (ITEM 13)

ITEM NO.	REFERENCE DESIGNATION
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	
27	
26	TP1, TP2
25	
24	
23	TB1
22	J2
21	J1
20	
19	R1
18	R2
17	R3
16	
15	C3
14	C4
13	C5 & C6
12	C1
11	C2
10	
9	CR1 & CR2
8	
7	
6	
5	
4	
3	
2	
1	

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 39
   AND MARK ASSY NO. AND LATEST ASSY REVISION.
3. TRANSISTOR LEADS MUST BE CUT SHORT AS POSSIBLE.
4. MOUSE TAILS (ITEM 27) ARE REQ'D ONLY IF C5 AND C6 ARE SUBSTITUTED FOR C1

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 058-17-03-701 REV A

ITEM NO	PART ASSY NO	DESCRIPTION	QUANTITIES

INCOTERM CORPORATION

This document is the property of INCOTERM CORPORATION and is loaned on the express condition that it not be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right granted to use or disclose any information contained in said document. This restriction does not limit the right to use information obtained from another source.

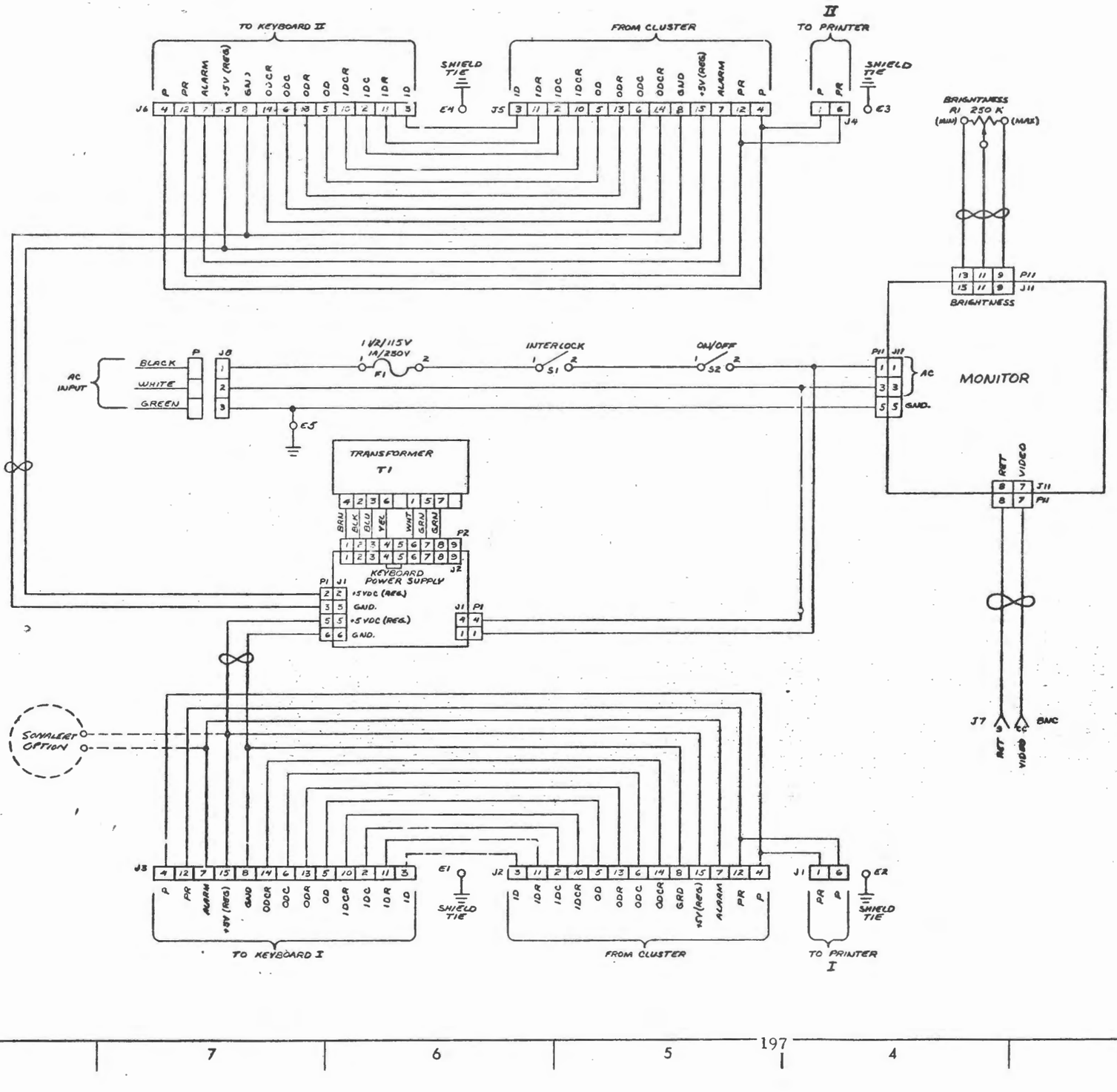
DRAWN		11-25-74
CHECKED		
ENGR APPR		
MFG APPR		
PART USED ON		

P.C. BOARD ASSY
SPLIT SCREEN POWER SUPPLY 701

SIZE	DOC. NUMBER	REV
D	058-17-02	A

SCALE 1/1 SHEET 1 OF 1

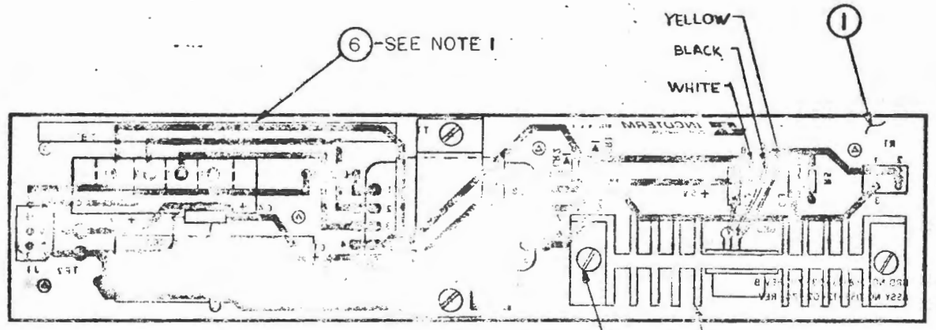
REVISION HISTORY		
REVISION	DESCRIPTION OF CHANGE	CHG
# 1	RELEASED FOR 850	



INCOTERM CORPORATION	6 STRAWMORE ROAD NATICK, MASSACHUSETTS 01760		
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.		POWER WIRE SCHEMATIC SPLIT SCREEM 001	
DRAWN	DATE 3/29/84	SIZE	DOCUMENT NUMBER / REV
CHECK	DATE 4/2/84	D	058-16-02 / A
ENG. MGR.	DATE		
APPROVE	DATE		
FIRST USED ON 058-16-01-701	SCALE	SHT 1 OF 1	

SUB ASSEMBLY RIVISION STATUS		
ASS'Y NO.	DESCRIPTION	REV
058-13-02-701	P.C. BOARD ASSY	C
058-10-23-701/702	HEATSINK ASSY	C

A		REV & REL RD# 854A		
B		REVISED/ECO 3338		
	B1	REV/ECO 3420 9-5-74		



NOTES:

1. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL (ITEM 6) AND MARK ASSY NO. 058-10-24-701 AND LATEST REVISION.

SUB ASSY REVISION STATUS		
ASSY NO.	DESCRIPTION	REV
058-13-02-701	PC BRD ASSY	C
058-10-23-701	HEAT SINK ASSY	C

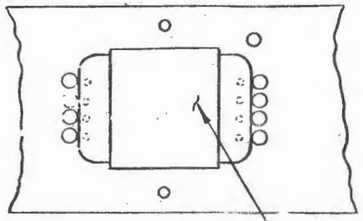
ITEM NO.	REFERENCE DESIGNATION
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	
27	
26	
25	
24	
23	
22	
21	
20	
19	
18	
17	
16	
15	
14	
13	
12	
11	
10	
9	
8	
7	
6	
5	
4	
3	
2	
1	

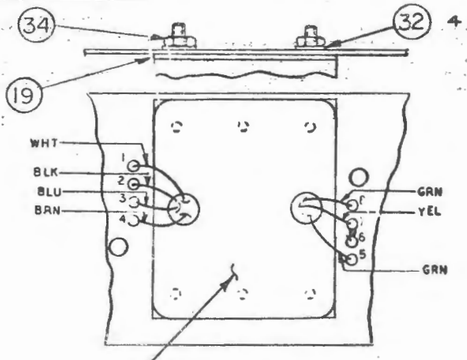
INCOTERM CORPORATION

ASSEMBLY KEYBOARD POWER SUPPLY 701/702

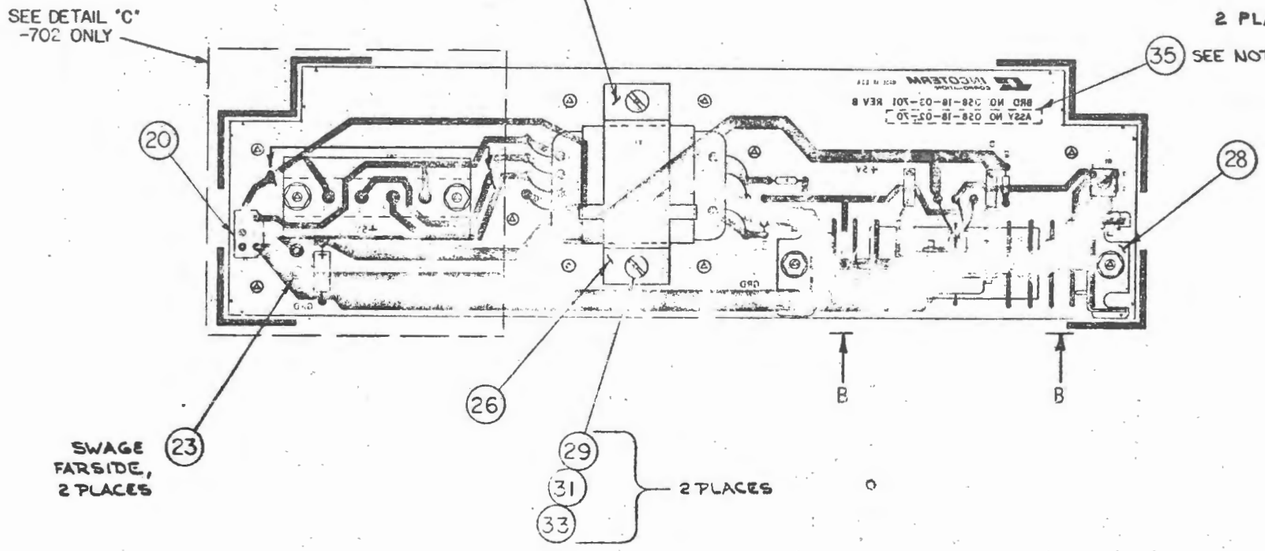
058-10-24 B1

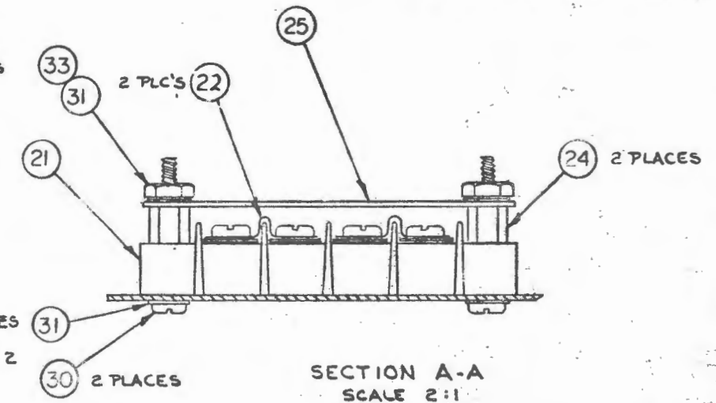
REVISION HISTORY			
REV	DESCRIPTION OF CHANGE	CHK	APPV
-	ENG RELEASE		
A	RELEASED 13401 12/16/74	DR	T.B.
A1	REVISED/ECO 3806		
A2	REVISED/ECO 3887 3/17/75		



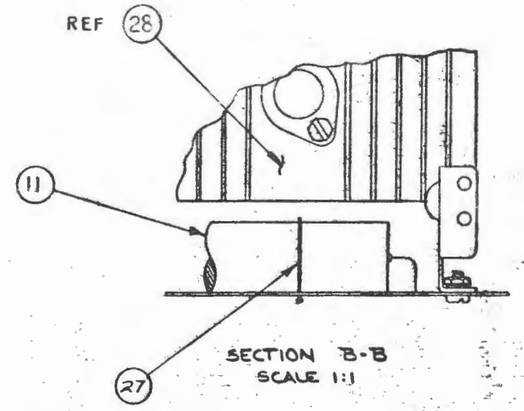


ALTERNATE "T1" MTG FOR 701 & 703 ONLY

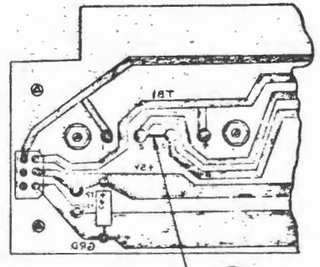




SECTION A-A
SCALE 2:1
-701 & -703 ONLY



SECTION B-B
SCALE 1:1



14 - JUMPER PIN 2 TO PIN 3 (WHERE TB1 NORMALLY LOCATED)

DETAIL C
-702 ONLY

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD 5.30 MAX
   ETCH SIDE OF BOARD .125 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 35
   AND MARK ASSY NO. AND LATEST ASSY REVISION. (FARSIDE)

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 058-18-03-701 REV B

ITEM NO.	REFERENCE DESIGNATION
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	
27	
26	
25	
24	
23	TP1, 2
22	
21	TB1
20	J1
19	
18	T1
17	T1
16	
15	CR 1,2
14	
13	C2,3
12	C4
11	C1
10	
9	R1
8	R2
7	
6	
5	
4	
3	
2	
1	

ITEM NO.	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION — 5 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

THIS DRAWING IS CONFIDENTIAL IN NATURE AND IS NOT TO BE DISCLOSED OR REPRODUCED IN WHOLE OR IN PART OR USED FOR MANUFACTURING PURPOSES BY ANYONE OTHER THAN INCOTERM EXCEPT WITH ITS WRITTEN CONSENT AND THAT NO RIGHT GRANTED, DIRECTLY OR INDIRECTLY, TO USE ANY INFORMATION CONTAINED HEREIN SHALL BE CONSTRUED AS GRANTING ANY LICENSE UNDER ANY PATENT OR OTHER RIGHT OF INCOTERM OR OTHERS WITH RESPECT TO ANY INVENTION DISCLOSED HEREIN AND INCOTERM RESERVES THE RIGHT TO REQUIRE THE RETURN OF THIS DRAWING AT ANY TIME UPON REQUEST.

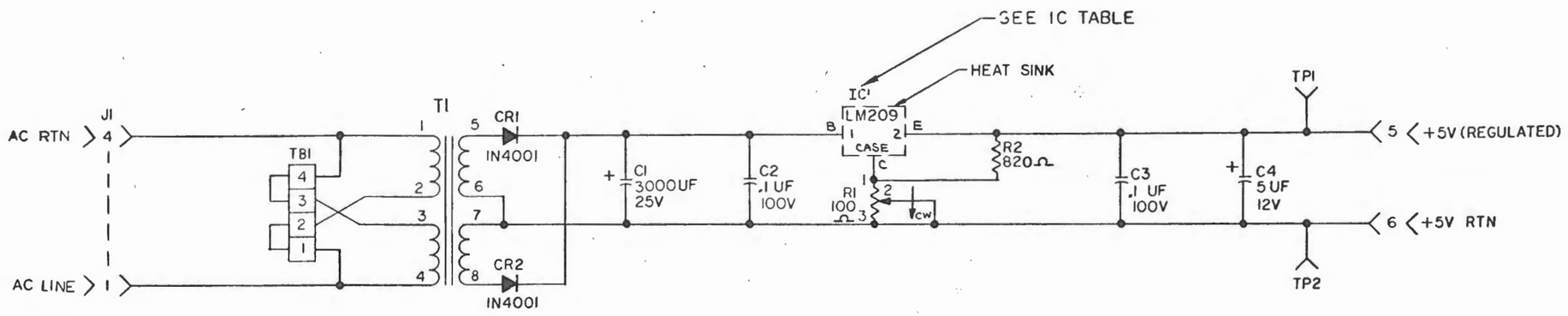
DRAWN	R.L. Gaskin III	12-16-74
CHECKED	[illegible]	12/20/74
ENGR APPV	J. Rich	2/17/75
MFG APPV		
PARTS LIST		

P.C. BOARD ASSY
POWER SUPPLY KYED
701-703

SIZE D | DOCUMENT NO. 058-18-02 | REV A3

SCALE 1:1 | SHT 1 OF 1

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RELEASED RD#854A		
B		REVISED/ECO 3338 8/22/74		
C		REV/ECO 3420 8/5/75		
D		REVISED/ECO 3698		



TBI INTERCONNECTION TABLE

NOMINAL AC LINE VOLTAGE	TB1 INTERCONNECTIONS
115 V	1-2, 3-4
230 V	2-3

IC1	TABLE
001	LM209
002	LM323K

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN
CHECKED D Ward
ENGINEER
APPD J. Peterson for LAB

TITLE SCHEMATIC KEYBOARD POWER SUPPLY 001/002

SIZE	DOCUMENT NUMBER	REV
D	058-13-01	D

SCALE NONE SHT 1 OF 1

FIRST USED ON 058-13-02701

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
N		REDRWN - PER ECO 3490		
P		REVISED/ECO 3800		
R		REVISED/ECO 3883		
S		REV/ECO 3961		

PRODUCT INDEX
010-10-00-701

UPPERCASE
KEY 67 ENCODED
KEY 40 ENCODED
KEY 51 ENCODED
KEY 27 ENCODED
KEY 52 THRU 76
NON SHIFTABLE

BRACKET ASSY (KYBD TO TERM) 055-10-20-701

SHIPPING CARTON SPEC - KEYBRD 090-01-07003

KEYBOARD OVERLAY ASSY 055-40-24-XXX

UPPERCASE
KEY 67 ENCODED
KEY 40 ENCODED
KEY 51 ENCODED
KEY 27 ENCODED
KEY 52 THRU 76
NON SHIFTABLE

WITH EXTERNAL LIGHT DRIVER

KEYBOARD TOP ASS: 055-15-02-701 "TWA"

- OPTION BLOCK 001-11-01-1002 (1)
- (REF) SILKSCREEN DWG 051-10-10-001
- (1) P/L KEYBRD SUB ASSY 055-10-01-703 (PARS)
  - CABLE ASSY EXTERNAL 058-10-15-701 P/L(1)
  - CABLE ASSY INTERNAL 055-10-18-701 P/L(1)
  - KEYBOARD SKIN 051-10-03-701 (1)
  - (1) P/L KEYBRD DEVICE ASSY 055-10-15-705
    - (1) P/L KEYBRD DEVICE SUB-ASSY 055-10-13-705
      - (1) P/L P.C. BOARD ASSY 055-20-02-701
      - (1) P/L SWITCH PLATE ASSY 055-10-19-701
  - (1) P/L LED ASSY 051-10-06-701
    - (1) P/L CABLE ASSY 051-10-12-701
    - (1) P/L LED PANEL SUB-ASSY 051-10-11-701
  - (1) BOTTOM PAN 051-10-05-701

KEYBOARD TOP ASSY 055-16-02-701 "DE TA"

- OPTION BLOCK 001-1-01-1002 (1)
- (REF) SILKSCREEN DWG 055-16-10-001
- (1) P/L KEYBOARD SUB-ASSY 055-10-01-706
  - CABLE ASSY EXTERNAL 058-10-15-701 P/L (1)
  - CABLE ASSY INTERNAL 055-10-18-701 PL (1)
  - KEYBOARD SKIN 055-16-03-701 (1)
  - (1) P/L KEYBRD DEVICE ASSY 055-10-15-706
    - (1) P/L KEYBRD DEVICE SUB-ASSY 055-10-13-706
      - (1) P/L P.C. BOARD ASSY 055-21-02-701
      - (1) P/L SWITCH PLATE ASSY 055-10-14-701
  - (.) P/L LED ASSY 055-16-06-701
    - (1) P/L CABLE ASSY 051-10-12-701
    - (1) P/L LED PANEL SUB-ASSY 055-16-41-701
  - (1) BOTTOM PAN 051-10-05-701

KEYBOARD TOP ASSY 055-11-01-XXX (SEE TABLE SHT 2 FOR VARIATIONS)

- OPTION BLOCK 001-11-01-XXX (1) (SEE TABLE SHT 2 FOR VARIATIONS)
- REF SILKSCREEN DWG 051-10-01-001
- KEYBOARD SUB-ASSY 055-10-01-XXX (SEE TABLE SHT 2 FOR VARIATIONS)
  - CABLE ASSY EXTERNAL 058-10-15-701 P/L(1)
  - BOTTOM PAN 051-10-05-701
  - CABLE ASSY INTERNAL 055-10-18-701 (1)P/L
  - KEYBOARD SKIN 051-10-03-XXX (SEE TABLE SHT 2 FOR VARIATIONS)
  - CABLE ASSY INTERNAL 055-10-06-701 (REPLACED BY 055-10-18-701)
  - (.)P/L LED ASSY 055-10-06-XXX (SEE TABLE SHT 2 FOR VARIATIONS)
    - CABLE ASSY 051-10-12-701 (1)P/L
    - (1)P/L LED PANEL SUB-ASSY 051-10-11-XXX (SEE TABLE SHT 2 FOR VARIATIONS)
  - REF KEYBOARD DEVICE SPEC 980-01-15
    - KEYBOARD OUTLINE 049-24-01
  - KEYBOARD DEVICE ASSY 055-10-15-XXX (SEE TABLE SHT 2 FOR VARIATIONS)
    - KEYBOARD SUB-ASSY 055-10-13-XXX (SEE TABLE SHT 2 FOR VARIATIONS)
      - P.C. BOARD ASSY 055-13-02-XXX (1)P/L (SEE TABLE SHT 2 FOR VARIATIONS)
      - P/L(1) SWITCH MTG PLATE 055-10-19-701

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE:
3 PLACE DECIMAL ± .005
2 PLACE DECIMAL ± .01
FRACTIONS ± 1/64
ANGLES ± 1°

DRAWN		2/24/84
CHECKED		2/24/84
ENGINEER		2/24/84
APPROVED		DATE

TITLE: DOCUMENT TREE CLUSTER KEYBOARD 001

SIZE	DOCUMENT NUMBER	REV.
D	055-10-00	S

FIRST USED ON 010-10-00-701 | SCALE 4 | SHT 1 OF 2

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

* LED COLORS:
R-RED
G- GREEN
Y- YELLOW
W- WHITE

KEYBOARD TOP ASSY		FUNCTIONAL DESCRIPTION		OPTION BLOCK	KEYBOARD SUB - ASSY	KEYBOARD SKIN	LED ASSY	LED PANEL SUB - ASSY *	KEYBOARD DEVICE ASSY	KEYBOARD SUB-ASSY	P.C. BOARD ASSY
INCOTERM STD 3270 KEYBD.	T01	UPPER CASE - KEY 67 MODE; KEY 40,51 SHIFT; KEY 27 NON-ENCODED SHIFT LOCK; KEY 52-76 SHIFT INTO LOWER CASE CODES	EBCDIC KEYBOARD	001-11-01-996	055-10-01-701	051-10-03-T01	051-10-06-701	R R R R R R R 051-10-11-701	055-10-15-703	055-10-13-703	055-13-02-701
	T02	UPPERCASE - KEY 67 ENCODED; KEY 40,51 SHIFT, KEY 27 NON-ENCODED SHIFT LOCK, KEY 52-76 SHIFT INTO LOWER CASE CODES		001-11-01-998							
	T03	UPPERCASE - KEY 7 ENCODED; KEY 40,51 SHIFT, KEY 27 NON-ENCODED SHIFT LOCK, KEY 52-76 SHIFT VIA BIT 2		001-11-01-1021							
	T04	UPPER CASE - KEY 67 ENCODED; KEY 40,51 SHIFT; KEY 27 NON-ENCODED SHIFT LOCK, KEY 52-76 SHIFT INTO LOWER CASE CODES PLUS BIT 8		001-11-01-1020							
	T05	UPPER-LOWER CASE - KEY 67 MODE; KEY 40,51 SHIFT KEY 27 NON-ENCODED SHIFT LOCK, KEY 52-76 NON-SHIFTABLE		001-11-01-999							
	T06	UPPER-LOWER CASE - KEY 67 ENCODED; KEY 40,51 SHIFT; KEY 27 NON-ENCODED SHIFT LOCK, KEY 52-76 NON-SHIFTABLE		001-11-01-1001							
055-11-01	T07	UPPER-LOWER CASE - KEY 67 ENCODED; KEY 40,51 SHIFT; KEY 27 NON-ENCODED SHIFT LOCK; KEY 52-76 SHIFT VIA BIT 8		001-11-01-1000	055-10-01-701				055-10-15-703	055-10-13-703	
INCOTERM STD PARS	T08	UPPERCASE - KEY 67 MODE; KEY 40,51,27 ENCODED; KEY 52-76 NON-SHIFTABLE	PARS KEYBOARD	001-11-01-1030	055-10-01-702				055-10-15-704	055-10-13-704	
	T09	UPPERCASE - KEY 67,40,51,27 ENCODED; KEY 52-76 NON-SHIFTABLE		001-11-01-1002	055-10-01-702				055-10-15-704	055-10-13-704	
	T10	UPPERCASE - KEY 67 ENCODED; KEY 40,51 SHIFT; KEY 27 ENCODED; KEY 52-76 SHIFT INTO LOWER CASE CODES		001-11-01-1028	055-10-01-702	051-10-03-701			055-10-15-704	055-10-13-704	
	T11	SAME AS T02 EXCEPT WITH BLACK SKIN (MOPAC)		001-11-01-998	055-10-01-705	051-10-03-702			055-10-15-703	055-10-13-703	
	T12	SAME AS T10 EXCEPT WITH BLACK SKIN (MOPAC)		001-11-01-1028	055-10-01-706	051-10-03-702	051-10-06-701	R R R R R R R 051-10-11-701	055-10-15-704	055-10-13-704	055-13-02-701
	T13	SAME AS T09 EXCEPT WITH SPECIAL LED COLORS		001-11-01-1002	055-10-01-707	051-10-03-701	051-10-06-702	W G G R R Y R R 051-10-11-702	055-10-15-707	055-10-13-707	055-13-02-702
	T14	SAME AS T02 EXCEPT LEFT HAND LIGHT ON WHEN IN SHIFT MODE		001-11-01-998	055-10-01-708	051-10-03-701	051-10-06-701	R R R R R R R 051-10-11-701	055-10-15-708	055-10-13-708	055-13-02-703
	T15										

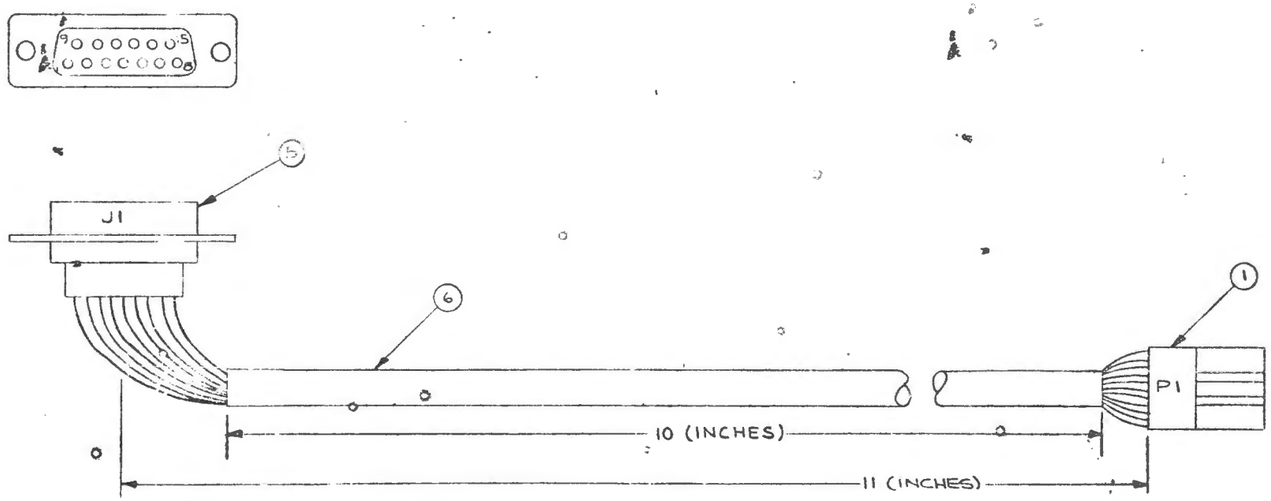
This document is the property of INCOTERM CORPORATION and is submitted on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

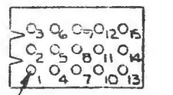
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

DIMENSIONS ARE IN INCHES AND TOLERANCES ARE
2 PLACE DEC. ± .05
3 PLACE DEC. ± .010
FRACTIONS ± 1/64
ANGLES ± 1/2°

DRAWN	DATE 12-17-79	TITLE: DOCUMENT TREE CLUSTER KYBD -001
CHECKED	DATE	SIZE D; DOCUMENT NUMBER 055-10-00; REV S
ENGINEER	DATE	
APPROVED	DATE	
NEXT USED ON		SCALE NONE; SHT 2 OF 2

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RELEASED/RD# 751E	7	7
B		CHANGE PRIOR TO RELEASE	7	7
C		REVISED/ECO 2886	RM	RM
	C1	REVISED/ECO 3298	RM	CJA





NOTES
1. ALL WIRES TO BE CRIMPED BOTH ENDS.
2. ITEM 2 MUST BE CRIMPED AN INSTALLED IN PLACE (P1-1) TO KEY CONNECTOR

WIRE LIST

NO	ITEM NO.	AWG	COLOR	ATTACH ITEM NO.	FROM	TO	ATTACH ITEM NO.
1	8	22	BROWN	2	P1-1	J1-12	7
2	9	22	RED	3	P1-2	J1-11	7
3	10	"	ORANGE	"	P1-4	J1-2	"
4	11	"	YELLOW	"	P1-5	J1-10	"
5	12	"	GREEN	"	P1-7	J1-5	"
6	13	"	BLUE	"	P1-8	J1-13	"
7	14	"	VIOLET	"	P1-10	J1-6	"
8	15	"	GRAY	"	P1-11	J1-14	"
9	16	"	WHITE	"	P1-3	J1-1	"
10	17	"	BLACK	"	P1-14	J1-9	"
11	18	"	WHT/BLK	"	P1-13	J1-7	"
12	19	22	WHT/RED	3	P1-15	J1-15	7

ITEM	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

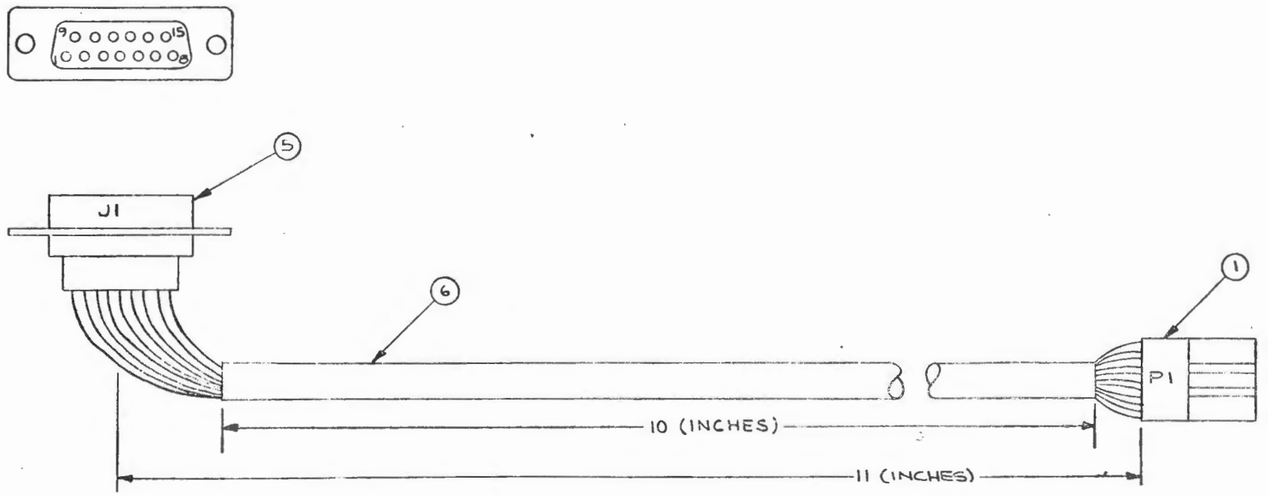
INCOTERM CORPORATION

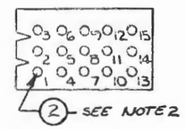
CABLE ASSY CLUSTER KEYBOARD 701

D 055-10-06 C1

203

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
A1	RELEASED / RD* 73265	Z	Z





NOTES
1. ALL WIRES TO BE CRIMPED BOTH ENDS.
2. ITEM 2 MUST BE CRIMPED AN INSTALLED IN PLACE (P1-1) TO KEY CONNECTOR

WIRE LIST

NO.	ITEM NO.	AWG	COLOR	ATTACH ITEM NO.	FROM	TO	ATTACH ITEM NO.
1	8	22	BROWN		P1-1	J1-3	7
2	9		RED	3	P1-2	J1-11	
3	10		ORANGE		P1-4	J1-2	
4	11		YELLOW		P1-5	J1-10	
5	12		GREEN		P1-7	J1-5	
6	13		BLUE		P1-8	J1-13	
7	14		VIOLET		P1-10	J1-6	
8	15		GRAY		P1-11	J1-14	
9	16		WHITE		P1-3	J1-1	
10	17		BLACK		P1-14	J1-8	
11	18		WHT/BLK		P1-13	J1-7	
12	19	22	WHT/RED	3	P1-15	J1-15	7

ITEM NO	PART ASSY NO	DESCRIPTION	QTY ASSEMBLY CHANGES

INCOTERM CORPORATION

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corp. except with out its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN		
CHECKED		
APPROVED		
MFG		

TITLE: CABLE ASSY CLUSTER KEYBOARD 701

SIZE	DOCUMENT NUMBER	REV
D	055-10-18	A

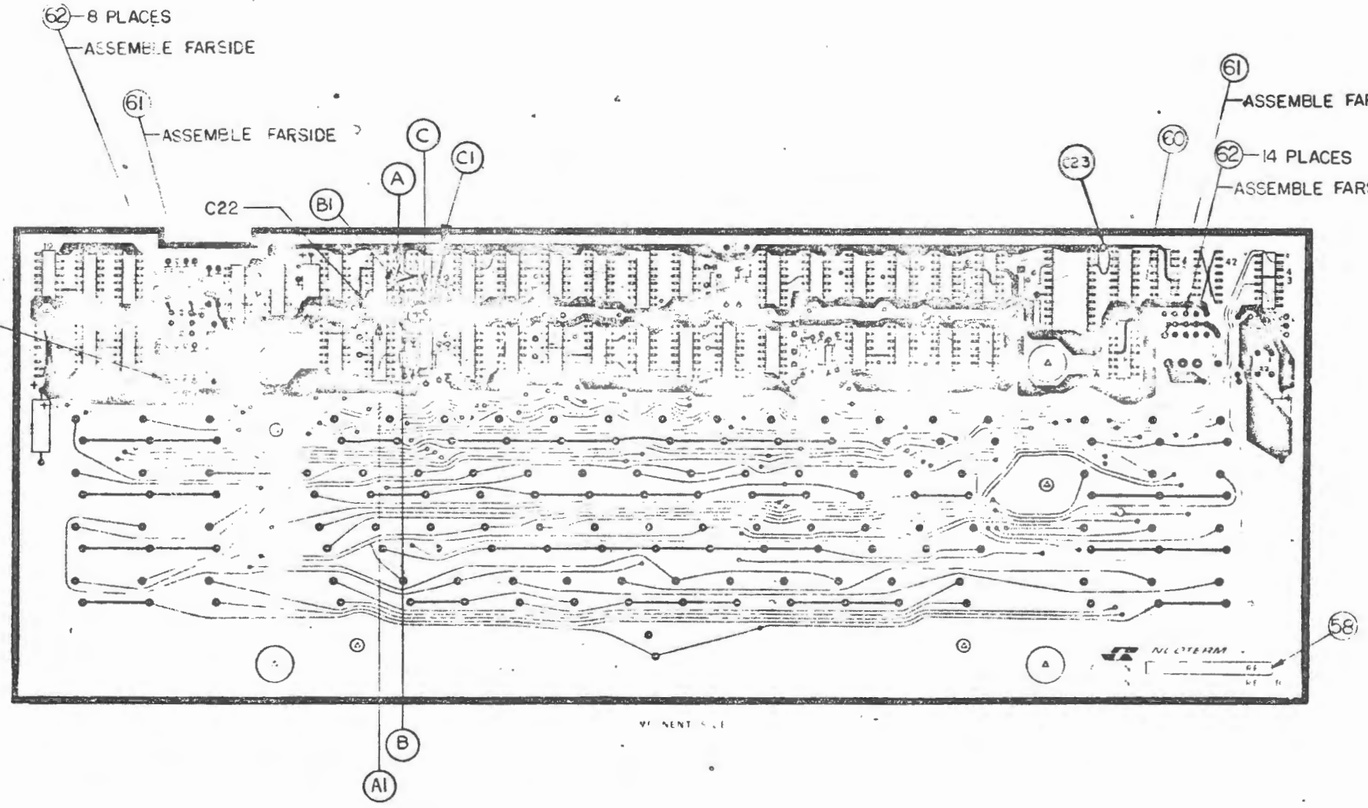
FIRST USED ON: 055-10-01-703 | SCALE: NONE | SHEET 1 OF 1

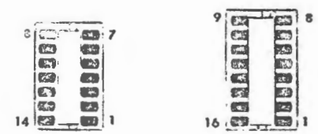
CUT ETCH FROM				
A	M26-11	TO	M25-10	
B	M25-2	TO	M26-13	
C	M26-13	TO	M26-1	
D	M3-14	TO	R20	703 ONLY

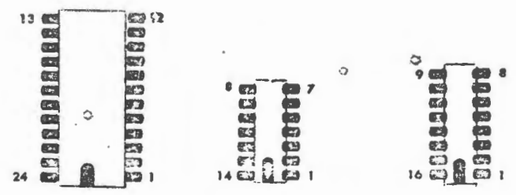
ADD JUMPER WIRE ITEM 63			
A1	M26-13	TO	M25-10
B1	M26-11	TO	M26-1
C1	M26-11	TO	M25-2

REVISION HISTORY				
ITEM		DESCRIPTION	DATE	APP'D
	A2	RELEASED ECO # 737AD	4	
B		REVISED / ECO 3080 4/12/74		
	C	REV / ECO 3208 5-10-74		
	C1	REV/ECO 3215 5/24/74		
D		REVISED/ECO 3255 7/2/74		
	D1	REVISED/ECO 3278 8/19/74		
E		REVISED/ECO 3489 1/8/75		
	E1	REVISED/ECO 3690 4/18/75		
	E2	REVISED/ECO 3839 2-3-75		
	E3	REVISED/ECO 3860 2-12-75		

ITEM NO.	REFERENCE DESIGNATION
65	R21,22 (702 ONLY)
64	C23
63	
62	
61	
60	M18 (SOCKET)
59	
58	
57	C22
56	C9-C11
55	6,20
54	C3
53	C12-C15
52	C4,16,19
51	C1,2,5,6,21
50	C7
49	R1-OR4
48	R2
47	
46	R5
45	R3,6
44	28
43	R9
42	R11,19
41	R2
40	R14
39	
38	R6,7
37	
36	R ,8
35	R20,23-27 (701&702) R21,22 (701 ONLY)
34	R10,17,18
32	M16
31	M10
30	M40
29	M43
28	M3,21
27	M33
26	M20
25	M39
24	M17
23	M7
22	M6,12,22
21	M23,36,41
20	M34
19	M5,31
18	M19,26,30
17	M29
16	M11
15	M2
14	M38
13	M14
12	M4,28
11	M9,13,24,35
10	M8,25,37
9	M15,27,32
8	
7	
6	
5	
4	
3	
2	
1	







PIN NUMUMBERING

AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD 400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 58
   AND MARK ASSY NO. 055-13-02-701 AND LATEST ASSY REVISION.
3. PATTERNS MARKED 'X' NOT USED M1, M42

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 055-13-03-701 REV 3

ITEM NO.	PART NO.	DESCRIPTION	QTY
63	945-02-02-001	WIRE #24 GA SOLID WHT	.5FT
2	055-13-03-701	ARTWORK ASSY (REV 3)	1

INCOTERM CORPORATION

P.C. BOARD ASSY
EXTENDED DRIVE
KEYBOARD (3270) 7018 - 7035

D 055-13-02 E3

SHEET 1 OF 1 4

CUT ETCH FROM
A1M19-1 AT M19-1

ADD JUMPER WIRE (ITEM G3) FROM	
A1 EYELET TO EYELET	703 ONLY

B DIA
14 HOLES

B DIA
8 HOLES

A

A1

DETAIL A
8 HOLES
8 PLACES

ETCH SIDE

ASSEMBLE WITH ARTWORK 050-13-03-701 REV B

P.C. BRD ASSY
PC BOARD SERVICE
701E-703B
050-13-02 E3
SHEET 2 OF 4

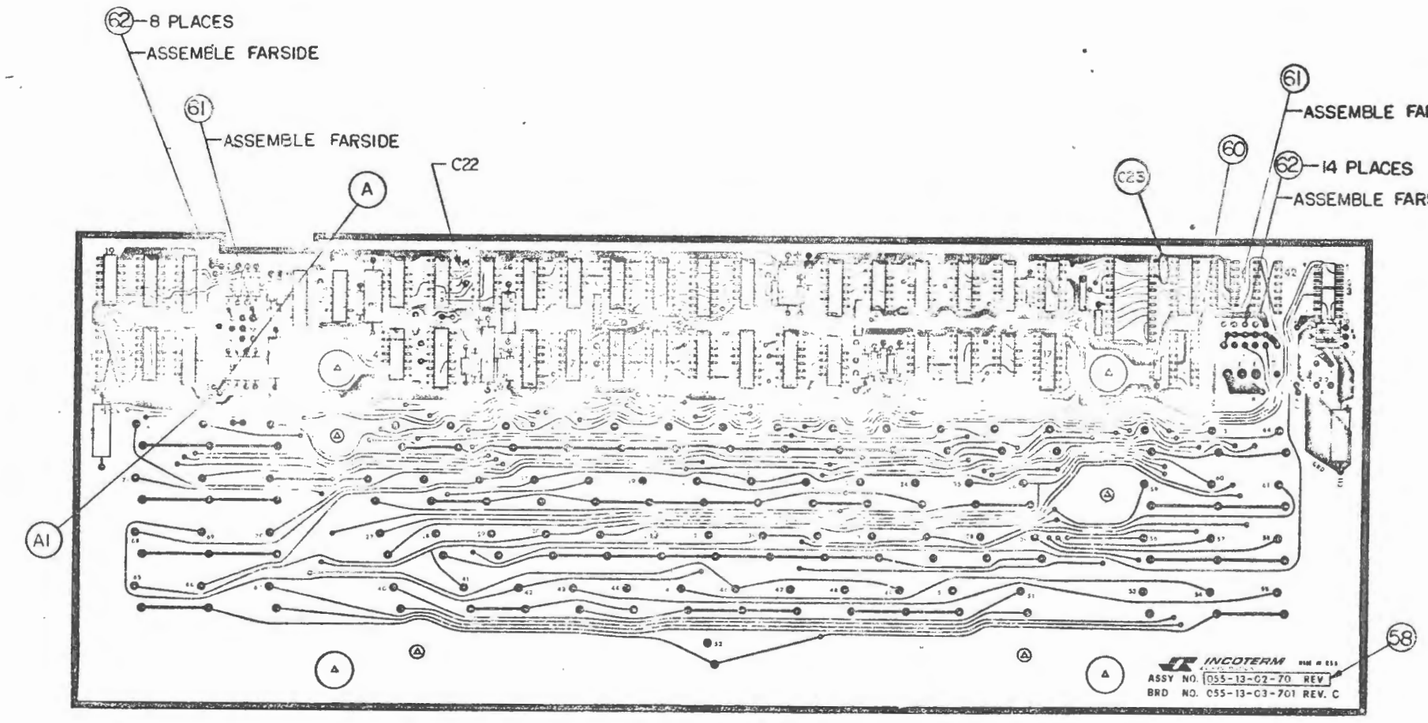
206

CUT ETCH FROM		
A	EYELET 3 TO EYELET 2	703 ONLY

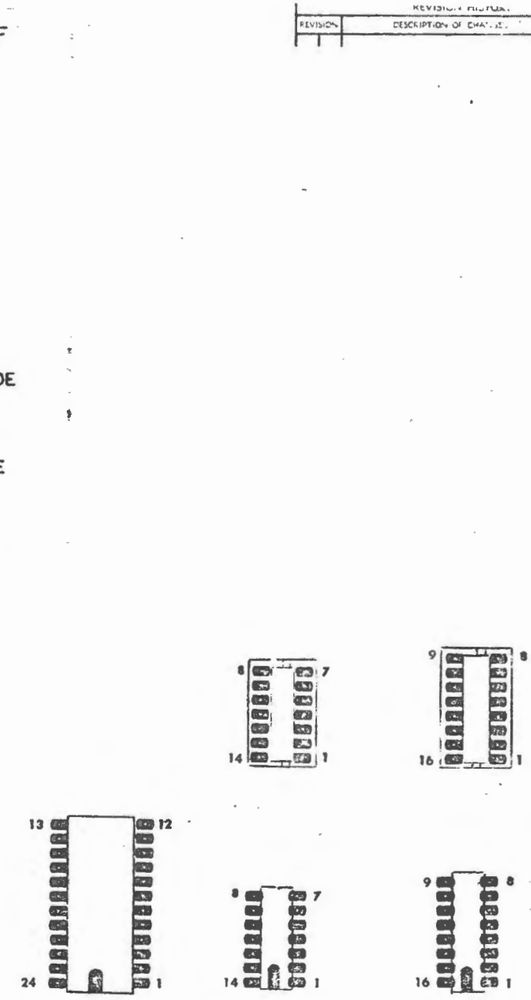
ADD JUMPER WIRE (ITEM 63) FROM		
A1	EYELET 2 TO EYELET 1	703 ONLY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

ITEM NO.	REFERENCE DESIGNATION
65	C21,22 (702 ONLY)
64	C23
63	
62	
61	
60	[illegible] (SOCKET)
59	
58	
57	C22
56	C9-C11
55	C8,20
54	C3,
53	C12-C15,
52	C[illegible]16
51	C1,2[illegible],21
50	C7
49	CR1-CR4
48	R12
47	
46	R3
45	R[illegible]3,4
44	R26
43	R9
42	R11,19
41	R2
40	R14
39	
38	R6,7
37	
36	R5,8
35	R20 3-27 (701&702) R2,22 (701 ONLY)
34	R10,17,18
33	M16
32	M10
31	M40
30	M43
29	M3,21
28	M33
27	M20
26	M39
25	M17
24	M7
23	M6,12,22
22	M23,36,41
21	M34
20	M5,31
19	M19,28,30
18	M29
17	M11
16	M2
15	M36
14	M14
13	M4,26
12	M9,13,24,35
11	M8,25,37
10	M15,27,32
9	
8	
7	
6	
5	
4	
3	
2	
1	



COMPONENT SIDE



PIN NUMBERING AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .060 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 58
   AND MARK ASSY NO. 055-13-02-701 AND LATEST ASSY REVISION.
3. PATTERNS MARKED "X" NOT USED MI, M42

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 055-13-03-701 REV C

ITEM NO	PART ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES
1			

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from other sources.

DRAWN [illegible] DATE 2.15.74
CHECKED [illegible] DATE 2.25.74
ENGINEER [illegible] DATE 2.5.74
APPROVED DATE
NEXT USED ON 055-1[illegible]-13-701

P.C. BOARD ASSY
EXTENDED DRIVE
KEYBOARD (3270) - TOIC 753C

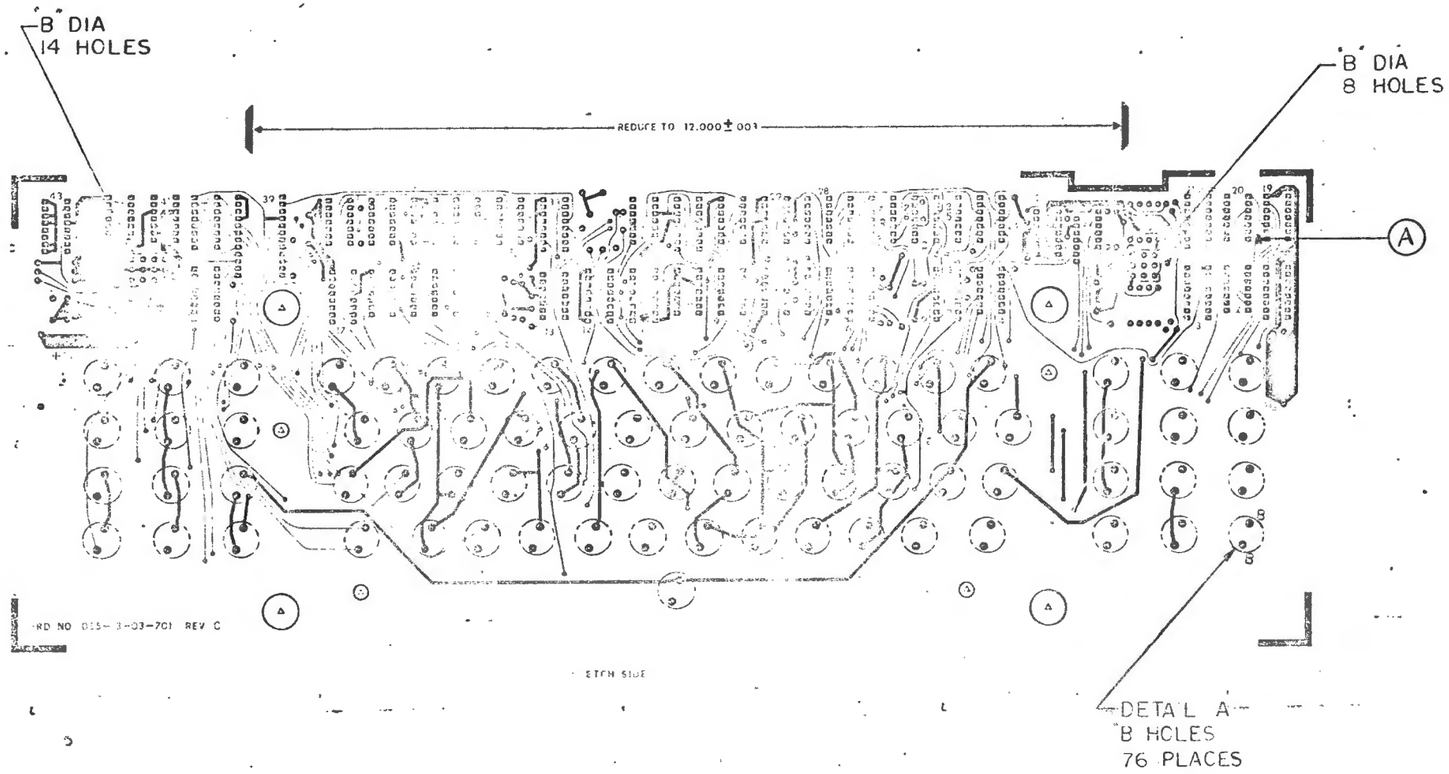
SIZE	DOCUMENT NUMBER	REV
D	055-13-02	E3

SHT 1-1 OF 3 OF 4

CUT ETCH FROM
A | MI9-1 AT MI9-1

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APP.



DETAIL A
B HOLES
76 PLACES

ETCH SIDE

ASSEMBLE WITH ARTWORK 055-13-03-701 REV C

ITEM NO	PART ASSY NO	DESCRIPTION	QTY

INCOTERM CORPORATION

P.C. BOARD ASSY.
KEYBOARD DEVICE
(3270) 701C-703C

D | 055-13-02 | E3

SCALE 1/1 | SHT 1 OF 4

208

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
E	1	REDRAWN / ECO 3440		
F		REVISED / ECO 3489 11/6/74		
G		REVISED / ECO 3620		
H		REVISED / ECO 3690		
J		REVISED / ECO 3860 2-7-75		

RESISTOR TABLE 1		
	-002	-001-003
R20	330Ω	330Ω
R21	130Ω	↓
R22	130Ω	
R23	330Ω	
R24	↓	
R25		
R26		
R27	330Ω	330Ω

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTORS VALUES ARE IN OHMS AND ARE 1/4W, ± 5%
   B. ALL CAPACITOR VALUES ARE IN MICRO-FARADS
   C. ALL DIODES ARE IN4148
2. 003 OPTION CAUSES LEFT LED TO LIGHT WHEN IN SHIFTED MODE. ETCH BETWEEN EYELETS 2 & 3 MUST BE CUT AND JUMPER ADDED BETWEEN EYELETS 1 & 2 FOR THIS OPTION. (SEE SHEET 4 OF 4 LOCATION D-4.

HIGHEST USED REF. DES			
M43	R26	C23	CR4
REF DES NOT USED			
M1, M42			

"This document is the property of INCOTERM CORPORATION and is loaned on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

TITLE: LOGIC DIAGRAM EXTENDED DRIVE KEYBOARD (3270)
001-003

SIZE	DOCUMENT NUMBER	REV
D	055-13-07	J

SCALE — SHT 1 OF 4

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APP'D

M13 CNT1 7404

DATEN

M8 7402

BIT 8 I
BIT 7 I
BIT 6 I
BIT 5 I
BIT 4 I
BIT 3 I
BIT 2 I
BIT 1 I

SHIFT LOAD
M33 74166
KDAT

M13 KDATI 7404

LOCK

M32 7400

M32 7400

M32 7400

SHFTCK

CNT 2 (SH 2)

SHFTEN M31 7476

M28 RPT 7474

RPTCK

M7 74128

MYGATE(SH3)M27-1

7454 DATMUX M29

M7 74128 OTDATAG

J2 OUTPUT DATA

J2 OUTPUT DATA RETURN

M7 74128 DAPRTYCK

M31 DAPRTY 7476

KEYBOARD DATA CLK J2 (10)

J2 (11)

R10 120Ω

KDATCK 8T14 M43

M9 7404

M11 CNTOI-CNT9I 7442

M10 KDCNTR 7490

M13 CNT 2 7404

M9 CNT0 7404

SHFTEN, M3I-9 (SH.2)

M9 CNTRST 7404

TEPLS

M8 7402

TEPLSI

M9 7404

M9 KDATCKI 7404

R11 12K +5V

C5 .01UF

C4 .022

M12 SYNCFF 74L123

SYNC

M8 7402

RESET

M8 7402

C6 .01

INIT (SH 3)

DELAY/FF*(SH 3)

M27 7400 WAIT

STRBF(SH1)

M30 STRBF CK 7474

1/4SEC(SH3)M6-10

MYGATE (SH3) M27-2

SCANEN (SH1) M14-11

DELAY/FF (SH 3) M28-11

M30 POLLED CK 7474

STRBF RST

STRB* (SH1)

M32 7400

M6-11 1/4SEC (SH3)

M6-3 1/10SEC(SH3)

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

The information on this drawing is the property of INCOTERM CORPORATION and is not to be reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without written consent, and it is not to be loaned, copied or used for any purpose detrimental to the interest of the owner. This restriction does not limit the right to use information obtained from other sources.

DRAWN	DATE 2-9-74	LOGIC DIAGRAM EXTENDED DRIVE KEYBOARD (3270) 001-003
CHECKED		
ENGINEER		SIZE D — DOCUMENT NUMBER 055-13-07 — REV J
APPROVED		
FIRST USED ON		SCALE — SHT 2 OF 4

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

R12 47K +5V
C7 47
CR2
M6 1/4 SEC 74L123
STRBFRST (SH2)
DELAY G
M27 7400
DELAY FF
POLLED (SH2)
7474 M28
WAIT (SH2)M27-5
R13 18K +5V
C8 22
CR3
MYGATE
STRBF (SH2)
M27 74C
M6 1/10 SEC 74L123
(SH2) STRBFRST
+5V
R14 1.8K
C9 25UF
INIT
M24 7404
RESET (SH2)M8-12
RESET I
LTR 1(SH4)M3-1
LTR 2(SH4)M21-1
LTSYNC(SH4)M22-11
BUZZ(SH4) M22-3

MAY EXIST IN EARLIER KEYBOARD MODELS

J2 (3) E1
E2
REF (9) J1
+5V
R15 1K
+C16 1UF
R16 100Ω
E3
C17 .1UF
(14) J2
+5V J2 (15)
J2 (14) GND
C10 25
C11 25
C12 .1
C13 .1
C14 .1
C15 .1

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

TITLE: LOGIC DIAGRAM EXTENDED DRIVE KEYBOARD (3270) 001-003

DRAWN	DATE 5-20-74	SIZE	DOCUMENT NUMBER / REV
CHECKED	DATE	D	055-13-07 J
ENGINEER	DATE		
APPROVED	DATE		
FIRST USED ON		SCALE	SHT 3 OF 4

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

J2 { 1, 2 } — 120Ω R17 — 8T14 M43 LTDATA

J2 { 4, 5 } — 120Ω R18 — 8T14 M43 LTCK

(SH 4) LTRCK

M20 LTSR 74164 (A, B, CK, QA–QH)

M3 LTR1 74175 (CK, C)

M21 LTR2 74175 (CK, C)

KEY 27 (SH 1)

SEE NOTE 2 (SH 1)

SEE TABLE I (SHT 1) FOR VALUE OF R20-27

R20, R21, R22, R23, R24, R25, R26, R27

J1

RESET I (SHT 3)

M24 7404

M25 7402

M5 LTPTY 7476 (J, K, CK, C, Q)

ZERO D1

ZERO D2

M2 7425

M4 7408

M27 7400

R28 39K +5V

C20 22 UF

CR4

M22 BUZZ 74L123 (C, RC, Q)

(SH.3) RESET I

M4 7408 LTRCK

LTR 1 (SHT 4) M3-9

LTR 2 (SHT 4) M21-9

M19 7474 (D, CK, Q)

C18 .022

C22 470 PF

M26 7408

M23 7493 (CK1, CK2, A, B, C, D)

C15 .022

R19 12K +5V

M22 LTSYNC 74L123 (C, RC, Q)

M7 74128

(SH 3) RESET I

C21 .01

M5 7476 (CK, K, C, Q)

INCOTERM CORPORATION — 6 STRATHMORE ROAD

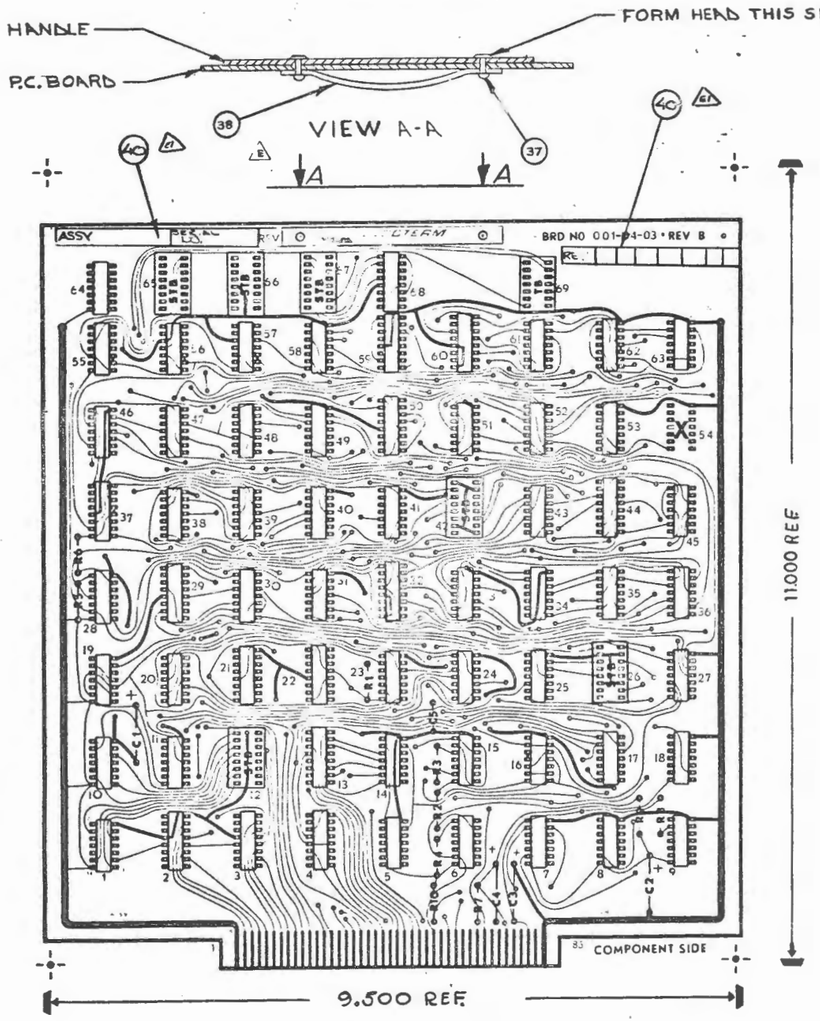
LOGIC DIAGRAM
EXTENDED DRIVE
KEYBOARD (3270)
001-003

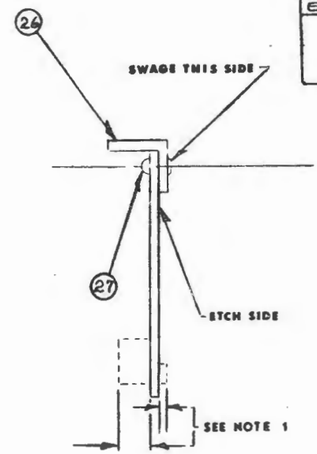
D | 055-13-07 | J

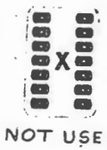
SHT 4 OF 4

212

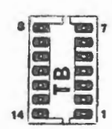
REVISIONS			
REV	DESCRIPTION	CHK	APPD
D	REDRAWN & REVISED PER ECO 1230 C Eddy 12 Nov 7	R.B 1/27/71	R.B 1/27/71 (M)
E	ECO 1439 5-4-71 RAF		(M)
E5	ECO 1974 CHANGES THIS DOCUMENT STRUCTURE PER PROCEDURE 300-002. SEE SHEET 1 FOR CONTINUING REVISION HISTORY ASSIGNMENT.		(M)

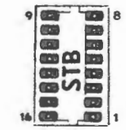


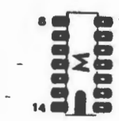


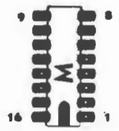


NOT USED









PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
34	R8
24	C5
23	C3, C4
22	C1, C2
21	R7
20	R3
19	R1, 2, 4, 5, 6, 9, 10
18	STB 12, 26, 42, 65, 66, 67
17	TB 69
16	M7, 8, 9
15	M18
14	M5, 14
13	M55, 56, 57
12	M22, 29, 32, 37, 44, 58, 59, 60, 68
11	M2, 3, 4, 13
10	M41, 47, 48, 53
9	M21
8	M17, 49
7	M64
6	M27, 36, 61
5	M19, 24, 33, 39
4	M11, 20, 31, 34, 46, 52
3	M1, 6, 10, 23, 28
2	M30, 40, 51, 58, 62, 63
1	M15, 16, 25, 35, 38, 43, 45

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.

COMPONENT SIDE

(E5) ASSY WITH ARTWORK NO. 001-04-03-701 REV B

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

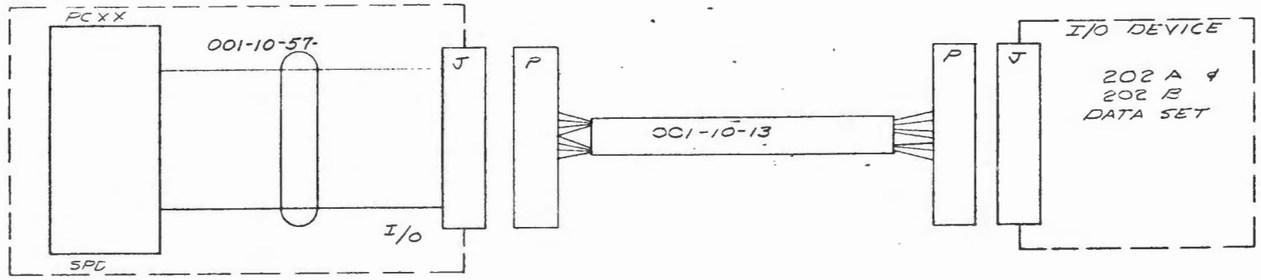
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2

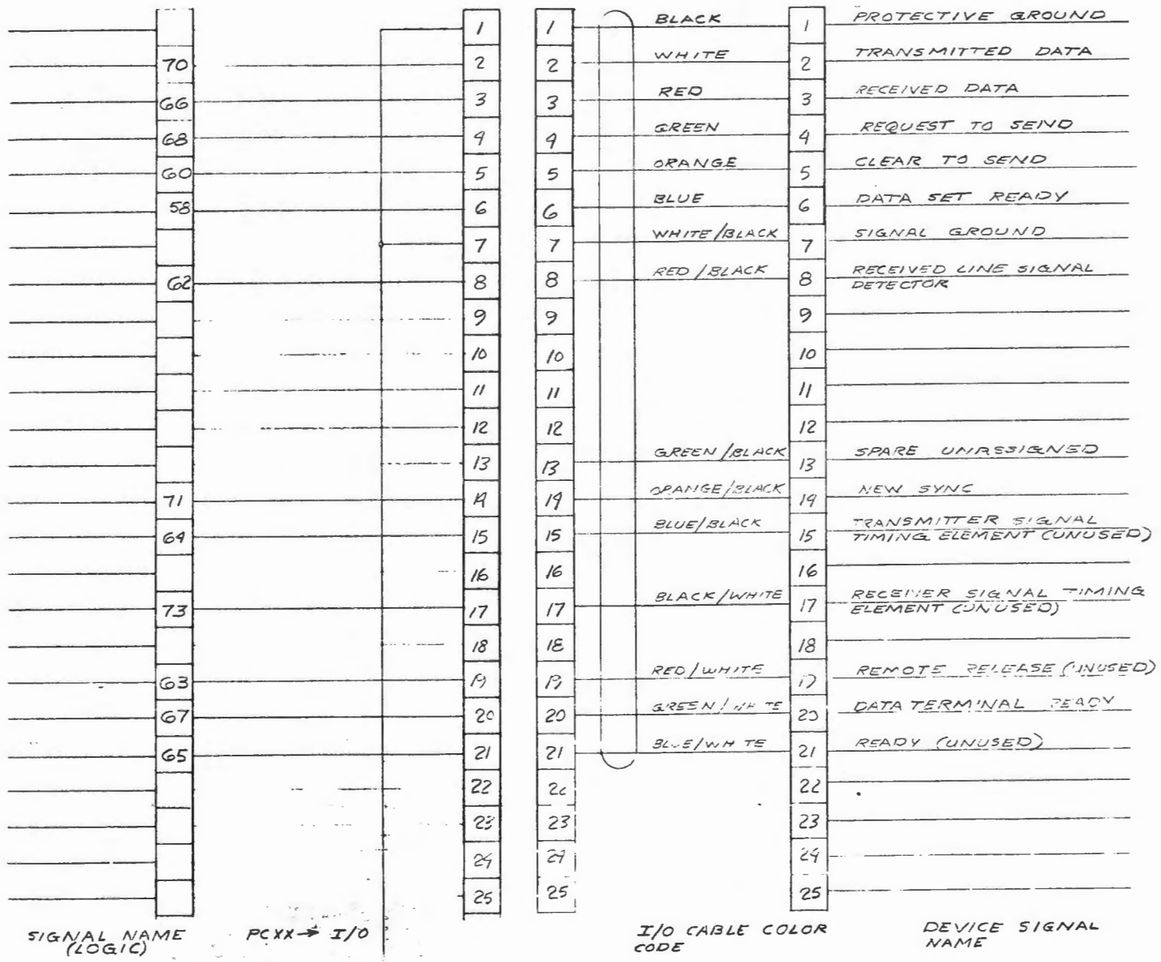
DR	R. Rosenstock	DATE 5-20-70
CHK	R. Bingham	5-5-70
ENG	R. Williams	5-5-70
APPD	Frank Lowney	5-5-70
NEXT ASSY	001-04-06	

TITLE
P.C. BOARD ASSY
ASYNCHRONOUS

SIZE	P C	S S	NO	REV
D	001-04-02			E5

SCALE 1:1 SHT 5 OF 5





ASYNCHRONOUS CONTROLLER

001

D COI-04-01 F

REVISIONS			
REV	DESCRIPTION	CHK	APPD

OTB 07 OTB06 OTB05 OTB04 OTB03 OTB02 OTB01 OTB00

17 15 13 11 9 7 5 3

PAR IN STROBE (SHT 2,5)

7475 M3 · 7475 M2

TDG9-13

DC1 (SHT4) · WRT 4/4 (SHT 3,5) · DC1 (SHT4)

SR PAR EN'B (SHT 5)

SDI (SHT) · (SHT 3,5) SDI

M31 7404 · M32 7476 PRESET

7495 M14 · 7495 M5

DC1 (SHT4) · PAR OUT STROBE (SHT 5)

M22 7476 CLEAR · XST866

BCT 0-DC3 (SHT 4)

7475 M13 · 7475 M4

45 47 49 51 41 39 43 46 — B07 B06 B05 B04 B03 B02 B01 B00

O1 O2 O3 O4 WORD LENGTH O8 O7 O6 O5 STB12

16 15 14 13 9 10 11 12

PAR IN STROBE (SHT 2, 5)

7403 M1 · 7403 M10

18 16 14 12 10 8 6 4 — IN B07 IN B06 IN B05 IN B04 IN B03 IN B02 IN B01 IN B00

BCT 0 (SHT4) · BCT 8 (SHT4)

TDG9-8

DC2 (SHT4)

M22 7476 CLEAR · XST866

7403 M28 · 7403 M28

+5V · R5 1K

DC3 (SHT4) · 2B+LB (SHT5)

M41 7474 PRESET

CTS WRT FF1 (SHT 3)

7402 M30 · 7402 SDO

SDO (SHT4)

CID DATA (SHT 3) · RESET (SHT 3) · CTS (SHT 5) · DSR+CARREL (SHT 3)

7400 M43 · 7420 M27 · STB26

75,76 → +18V

81,82 → -18V

1,2 → +5V

C1 5μF 12V · C2 5μF 12V · C3 5μF 25V · C4 5μF 25V

85,86 → GROUND

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.

INTERNATIONAL COMPUTER TERMINALS CORP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS ± .005 (3PLCS) ± .02 (2PLCS)
ANGLES ± 2°

TITLE: ASYNCHRONOUS CONTROLLER

001

DR	DATE	SIZE	P.C.	S.S.	NO.	REV
CHK		D	001-04-01		F
ENG					
APPD					
NEXT ASSY		SCALE		SHT 2 OF 6	

REVISIONS			
REV	DESCRIPTION	CHK	APPD

TB69-11

BC TO DC3 (SHT 4)

CTS-WRT FF SHT 3

IST WRT (SH 3,5)

CTS-WRT FF (SHT 2)

XMIT MODE

61

WRT F/F (SHT 2,4)

WRT F/F (SHT 3,4,5)

BCTI DC3 (SHT 4,5)

TB69-1

CTS STB 42-14

+5V

R1 1K

DSR+CANCEL (SHT 4)

DSR+CANCEL

SDI (SHT 2,5)

CTS (SHT 5)

(SH 5) WT WRT ENB

BCTO DC1 WRT F/F (SHT 4)

CIO DATA (SHT 2)

TB69-10

UNMASK (SH 5)

RESET

25

RESET (SHT 5)

RESET (SHT 2,5)

(SH 5) (WIO+RIO) ACK

R4 1K

ACK

27

BOOT (SHT 5)

R9 1K

+5V

55

CONTROLLER BOOT

BCT B (SHT 4)

RDY F/F (SHT 5)

CARRIER DETECTED

69

R2 1K

R3

500P C5

(WIO+RIO)(ADDXX) (SHT 3,5)

28 ADDXX

19 TYP00

21 TYP01

20 FUNC 00

22 FUNC 01

24 FUNC 02

26 FUNC 03

37 TURT4

TURT4 (SHT 4)

TURT4 (SHT 4)

LB (SHT 5)

1ST WRT (SHT 3)

R (SHT 5)

CD (SHT 4)

CTS (SHT 3)

CTS-WT (SH 2,4,5)

CTS WRT FF SHT 3

WRT F/F (SHT 3)

WRT INH (SHT 5)

INTERNATIONAL COMPUTER TERMINALS CORP.						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: DECIMALS ± .005 (3PLCS) ± .02 (2PLCS) ANGLES ± 2°		TITLE: ASYNCHRONOUS CONTROLLER 001				
DR C. Hill	DATE 2/6/76	SIZE	P.C.	S.S.	NO.	REV
CHK		D	001-0401			F
ENG		SCALE			SHT 3 OF 6	
APPD						
NEXT ASSY						

All of the material encorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.

REVISIONS			
REV	DESCRIPTION	CHK	APPD

CTS·WRT (SHT 2,3,5)
& ZERO (SHT5)
R (SHT5)
M33
M39
DC1 (SHT4)
DC3 (SHT4)
TURT4 (SHT3)
+5V
7476 DVBY1 M57
7493 DVBY2 M55
7493 DVBY3 M56
7493 DVBY4 M57
XST865
XST866
7404 M46
TURT4 (SHT3)
7402 STRCK M40
7430 DCD1 M69
7404 M46
7476 DCKO M37
WRT CLK
7403 DCK1 M28
XST866
7403 DCK2 M28
WRT CLK (SH 2,3)
R6 1K
7404 DCK3 M46
TURT4 (SHT3)
7476 M47
7476 M48
7476 M48
7402 DC2 M40
7440 DC1 M49
7400 DC3 M38
TB69-9
TB69-7
TB69-14
TB69-6
DC2 (SHT 2,5)
DC1 (SHT2,4)
DC1 (SHT 2,4)
DC3 (SHT 4)
DC3 (SHT 2,4)
7404 M31
7404 M46
STB 42
TRANSMITTER SIGNAL TIMING ELEMENT
64
CM1160 LR M8
RECEIVED LINE SIGNAL DETECTOR
62
CM1160 LR M8
STB26
CD (SHT3,5)
DATA SET READY + CANCEL
58
CM1160 LR M7
STB26
CANCEL+DSR (SHT3,5)
CLEAR TO SEND
60
CM1160 LR M7
CTS (SHT5)
RECEIVED DATA
66
-14V
R8 1.5K
CM1160 LR M9
SDI (SHT2)
DATA TERMINAL
67
R7 3.3K
+14V
SDO (SHT2)
M18 CM1150 LD
TRANSMITTED DATA
70
WRT CLK (SH 3,4,5)
STB26
M18 CM1150 LD
REQUEST TO SEND
68

DC1 (SHT4)
STB67
7476 M50
7476 M50
7476 M59
7476 M59
7476 M68
7476 M68
BCT ENABLE/DISABLE (SHT5)
STB67
DC1 (SHT4)
DC3 (SHT4)
7402 M58
DC3 (SHT4)
7474 M47
BRK CLK (SHT3)
7410 M39
7400 M38
7402 BCTO+BCT1 M58
7410 M39
7402 BCT8 M58B
7402 BCT9 M58
STB67
TB69-3
M31
M46
BCTO DC1 (SHT 3)
BCTO DC3 (SHT 2,)
BCTO (SHT5)
BCTO DC3 (SHT5)
BCTO+BCT1 (SHT5)
BCT1 DC3 (SHT3,5)
BCT8 (SHT2)
BCT8 (SHT 2,3)
BCT9 (SHT5)

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation

INTERNATIONAL COMPUTER TERMINALS CORP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS ± .005 (3PLCS) ± .02 (2PLCS)
ANGLES ± 2°

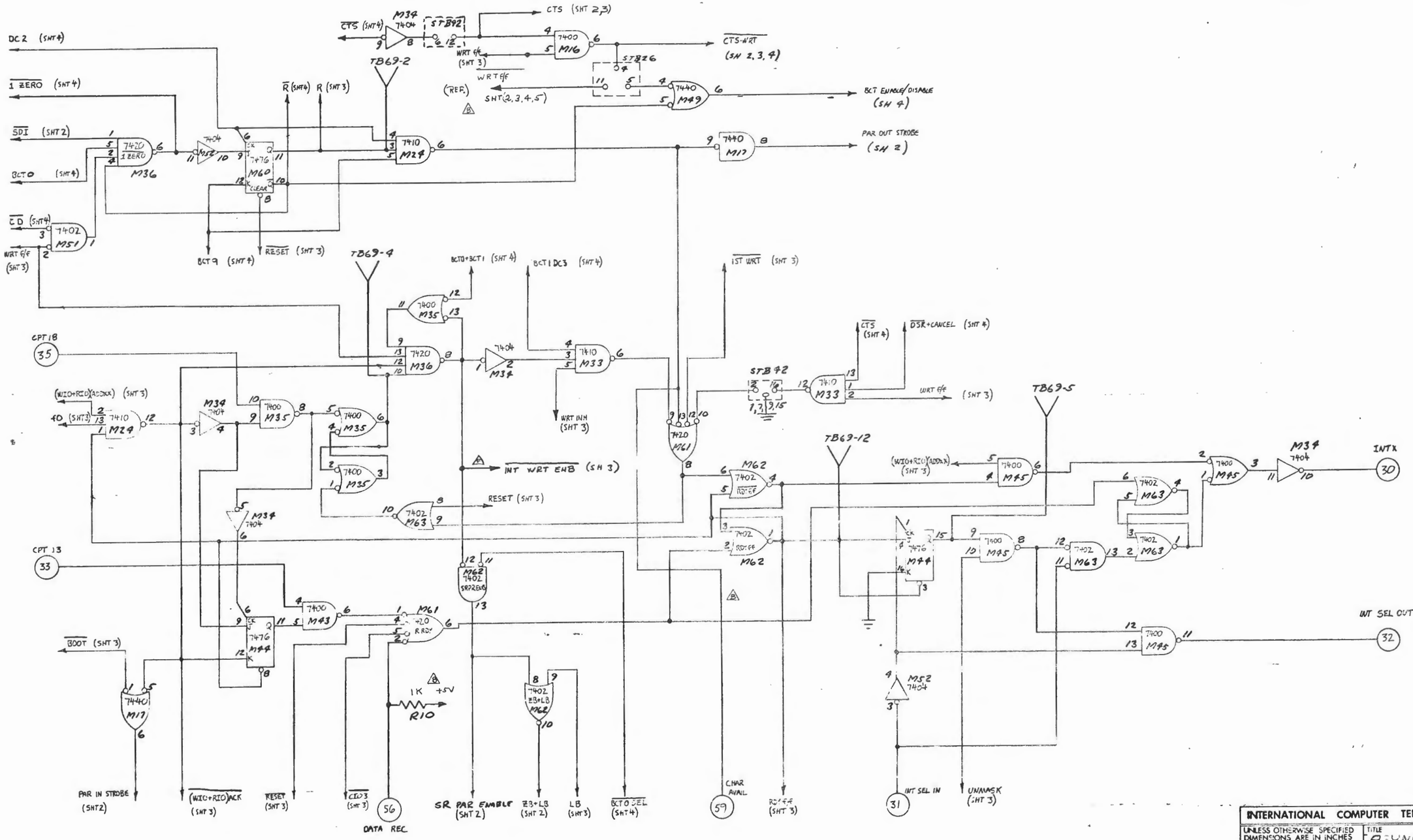
		DATE
DR		
CHK		
ENG		
APPD		
NEXT ASSY		

TITLE: ASYNCHRONOUS MODEM 201

SIZE	P.C.	S.S.	NO.	REV
D	101-0401			F

SCALE — SHT 4 OF 6

REVISIONS			
REV	DESCRIPTION	CHK	APPD



All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.

INTERNATIONAL COMPUTER TERMINALS CORP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS ± .005 (3PLCS) ± .02 (2PLCS)
ANGLES ± 2°

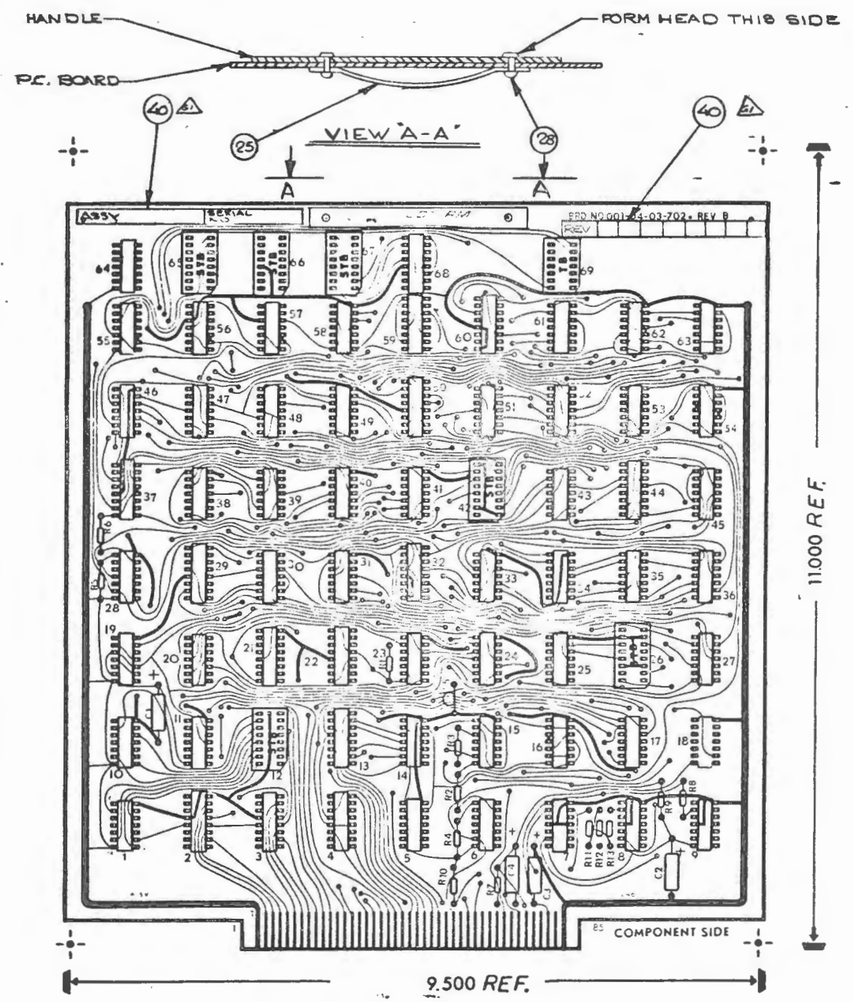
DR	DATE 6/26/70	
CHK		
ENG		
APPD		
NEXT ASSY		

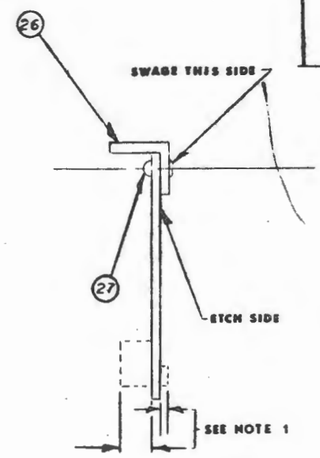
TITLE: ASYNCHRONOUS MODEM 001

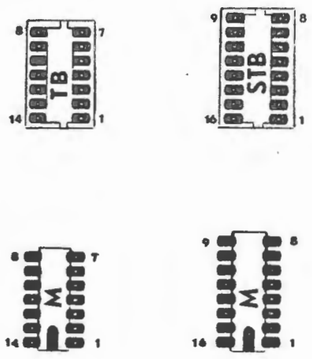
SIZE	P.C.	S.S	NO.	REV
D	001-09-01			F

SCALE — SHT 5 OF 6

REVISIONS			
REV	DESCRIPTION	CHK	APPD
G	REDRAW & REVISED /ECO 1490		
F	ECO 1975 CHANGES THIS DOCUMENT STRUCTURE PER PROCEDURE 300-002. SEE SHEET 1 FOR CONTINUING REV HISTORY ASSIGNMENT.		







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
34	R8,11, 12,13
24	C5
23	C3, C4
22	C1, C2
21	R7
20	R3
19	R1,2,4,5,6,9,10
18	STB 1226,42,65,66,67
17	TB 69
16	M7,8,9
15	M18
14	M5,14
13	M55,56,57
12	M22293237 44,5059,6068
11	M2,3,4,13
10	M 41, 47, 48, 53
9	M21
8	M17, 49
7	M64
6	M27, 36, 61
5	M19, 24, 33, 39
4	M11,20,31, 34, 46, 52
3	M1, 6,10,23,28
2	M30,40,51, 58,62,63
1	M15,16,25,35,38,43,45,54

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.

⚠2 ASSY WITH ARTWORK C01-04-03-702 REV B

INCOTERM CORPORATION — Hayes Memorial Drive, Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS .005 (3PLCS) .02 (2PLCS); ANGLES 2°

DR	RUSS FREDERICK	4-26-72
CHK	R.BILODEAU	5-5-72
ENG	R.BILODEAU	5-5-72
APPD	FRNK ENGINEER	5-5-72

TITLE: P.C. BOARD ASSY ASYNCHRONOUS 702

SIZE	P C	S S	NO	REV
D	C01-04-02			G

SCALE 1:1 SHT 5 OF 5

REVISIONS			
REV	DESCRIPTION	CHK	APPD

OTB07 OTB06 OTB05 OTB04 OTB03 OTB02 OTB01 OTB00

17 15 13 11 9 7 5 3

PAR IN STROBE (SHT 2,5)

7475 M3 · 7475 M2

7475 M13 · 7475 M4

7475 M14 · 7475 M5

7475 M22 · 7475 M22

7B69-13

7B69-8

DC1 (SHT4) · $\overline{DC1}$ (SHT4)

$\overline{RTS}$ (SHT 3,4)

SR PAR EAB (SHT 5)

SDI (SHT4)

$\overline{SDI}$ (SHT 3,5)

DC1 (SHT4)

DC2 (SHT4,5)

PAR OUT STROBE (SHT 5)

XST866

BLTO:DC3 (SHT 3,4)

M31 7404 · M32

BCTB (SHT4) · $\overline{BCTB}$ (SHT4)

7403 M28 · 7403 M28

+5V

R5 1K

ZB+LB (SHT 5)

$\overline{DCS}$ (SHT4)

7474 M41

$\overline{CTS}$ WRT FF1 (SHT 3)

7402 M30 · 7426 S20 M30

$\overline{SDO}$ (SHT4)

$\overline{CIO}$ DATA (SHT3)

7403 M43

XST826

RESET (SHT 3)

$\overline{CTS}$ (SHT 4)

7427 M27

$\overline{DSR+CANCEL}$ (SHT 3)

75,76 → +14V

81,82 → -14V

1,2 → +5V

C1 5μF 12V · C2 5μF 12V · C3 5MF 25V · C4 5μF 12V

85,86 → GROUND

45 BO7 · 47 BO6 · 49 BO5 · 51 BO4 · 41 BO3 · 39 BO2 · 43 BO1 · 46 BO0

STB12

O1 O2 O3 O4 WORD LENGTH O8 O7 O6 O5 O16 O15 O14 O13 O9 O10 O11 O12

PAR IN STROBE (SHT 2,5)

7403 M1 · 7403 M1 · 7403 M1 · 7403 M1 · 7403 M10 · 7403 M10 · 7403 M10 · 7403 M10

18 INBO7 · 16 INBO6 · 14 INBO5 · 12 INBO4 · 10 INBO3 · 8 INBO2 · 6 INBO1 · 4 INBO0

INTERNATIONAL COMPUTER TERMINALS CORP.

CPT.

2 OF 5

REVISIONS			
REV	DESCRIPTION	CHK	APPD

JUMPER WIRED VERSION

DETAIL A

SEE DETAIL 'A'

INTERNATIONAL COMPUTER TERMINALS CORP.

REVISIONS

REV	DESCRIPTION	CHK	APPD

CTS-WRT (SHT 3,4)
I ERRC (SHT
R (SHT 5)
DC1 (SHT 4)
DC3 (SHT 4)
M33
M39
TURT4 (SHT 3)
+5V
7493 DIV 12 M55
7493 DIV 3 M56
7493 DIV 4 M57
XSTB65
XSTB66
7404 M26
TURT4 (SHT 3)
7402 STRK M40
7430 DC D1 M69
WRT CLK
7413 DCK1 M28
XSTB GG
(SH 2,3)
7413 DCK2 M28
7404 M46
7476 DCK3 M37 CLEAR
STB-42
SRC (SH 4)
+5V
R6 1K
7404 M46
DCK3
TURT4 (SHT 3)
7476 M47
7476 M48
7476 M48
7432 DC2 M40
DC2 (SHT 2,3)
TB69-9
TB69-14
TB69-6
TB69-7
7400 M49
DC1
M31
DC1 (SHT 2,4)
DC3 (SHT 4)
7400 M38
DC3
M46
DC3 (SHT 2,4)
STB 42
STC
TRANSMITTER SIGNAL TIMING ELEMENT
64
CMOS LR M8
-14V
R13 15K
RECEIVED LINE SIGNAL DETECTOR
62
CMOS LR M8
STB26
CD (SHT 3,5)
-14V
R12 15K
DATA SET READY + CARRIER DET
58
CMOS LR M7
STB26
CARRIER DSR (SHT 3,5)
-14V
R11 15K
CLEAR TO SEND
60
M7
CTS (SHT 5)
SDD (SHT 2)
M18
TRANSMITTED DATA
70
WRT CLK (SH 3,4)
STB26
M18
REQUEST TO SEND
68
-14V
R8
RECEIVED DATA
66
SDI (SHT 2)
M9
DATA TERMINAL
R7 3.3K
+14V
67
73
RECEIVER SIGNAL TIMING ELEMENT
CMOS LR M3
SR (SH4)

DCI (SHT4)
7476 M50
7476 M50
7476 M59
7476 M59
7476 M68
7476 M68
BCT ENABLE/DISABLE (SHT 5)
STB67
DC1 (SHT4)
DC3 (SHT4)
7402 M58
7410 M39
7420 M38
DC3 (SHT4)
7474 M47
7402 M58
DC3 (SHT4)
7402 M58
7404 M39
7404 M46
TB69-3
WRT CLK (SHT 3)
BCT0 DC1 WRT CLK (SHT 3)
BCT0 DC3 (SHT 2)
BCT0 (SHT 5)
BCT5 DEL (SHT 5)
BCT0+BCT1 (SHT 5)
BCT1 DC3 (SHT 3,4)
BCT3 (SHT 2)
BCT8 (SHT 2,3)

INTERNATIONAL COMPUTER TERMINALS CORP.

CDI CA-01 C

SCALE SHT 3 OF 5

REVISIONS			
REV	DESCRIPTION	CHK	APPD

DC 2 (SH 2,4)

1 ZERO (SHT 4)

SOI (SHT 2)

BCT 0 (SHT 4)

(SHT 34) CD

WRT F/F (SHT 3)

M36 7420 1 ZERO

M51 7402

M60 7476 CLEAR

M24 7410

M34 7404

M16 7400

M49 7440

M17 7440

STB92

STB26

CTS (SHT 4)

CTS (SHT 3)

CTS-WRT (SH 3,4)

WRT F/F (SHT 3)

WRT F/F (SHT 2 3 4 5)

(RER)

TB69-2

R (SHT 3)

R (SHT 4)

BCT ENABLE/DISABLE (SH 4)

PAR OUT STROBE (SH 2)

BCT 9 (SHT 4)

RESET (SHT 3)

TB69-4

BCT0+BCT1 (SHT 4)

BCT1 DC3 (SHT 4)

M35 7400

M36 7420

M37 7404

M33 7410

WRT INH (SHT 3)

WRT INT ENB (SHT 3)

1ST WRT (SHT 3)

CPT 18 35

40 (SHT 2)

M24 7410

M39 7404

M35 7400

RESET (SHT 3)

M34 7404

CPT 13 33

M62 7402 SRFEMB

M62 7402 RDY F/F

M63 7402

M61 7420 RDY

M43 7400

M44 7476

M17 7440

BOOT (SHT 3)

RIO 1K +5V

M62 7402 EB+L8

STB42

CTS (SHT 4)

DSR+CANCEL (SHT 4)

WRT F/F (SHT 3)

M33 7410

TB69-5

TB69-12

(WIO+RIO) ADDR X (SHT 3)

M45 7400

M95 7400

M34 7404

INTR 30

M52 7404

INT SEL OUT 32

INT SEL IN 31

UNMASK (SHT 3)

PAR IN STROBE (SHT 2)

(WIO+RIO) ACK (SHT 3)

RESET (SHT 3)

LIO 3 (SHT 3)

56 DATA REC

SRQ/REMB (SHT 2)

EB-L8 (SHT 2)

L8 (SHT 3)

BTB SEL (SHT 4)

59 CHAR AVAIL

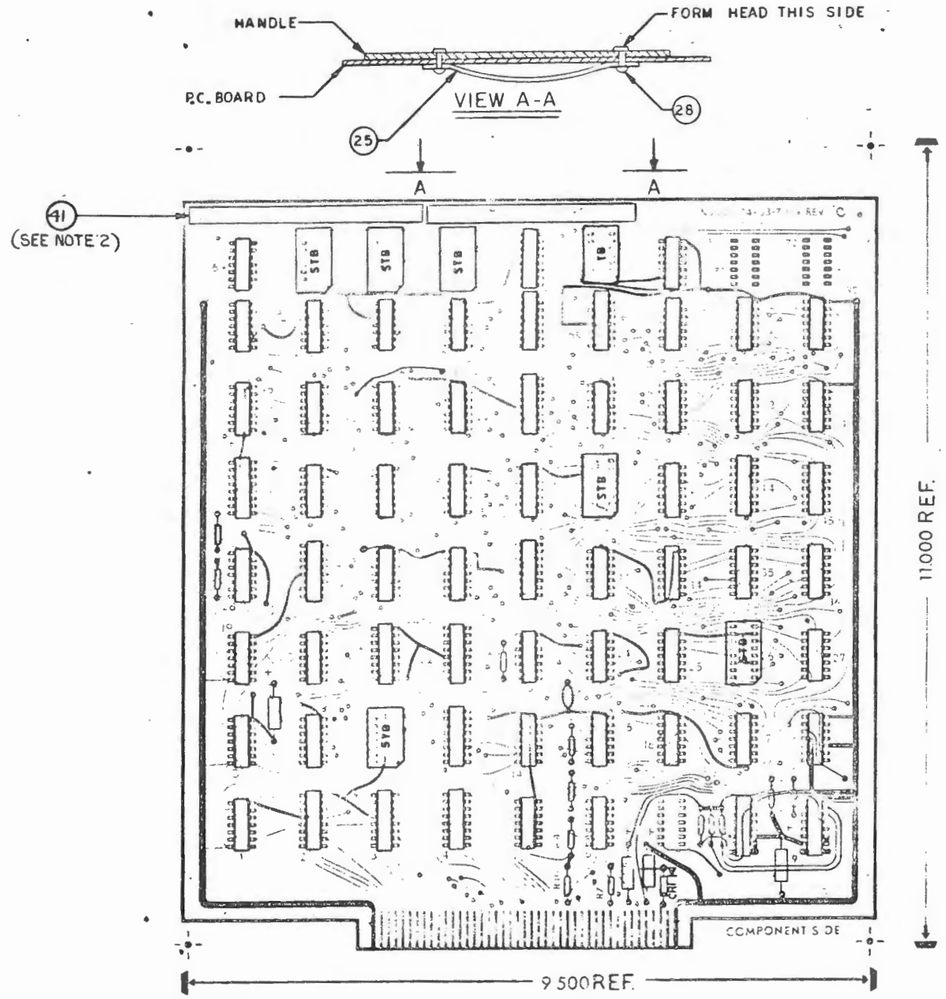
RD F/F (SHT 3)

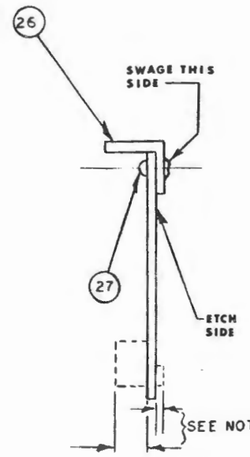
INTERNATIONAL COMPUTER TERMINALS CORP.

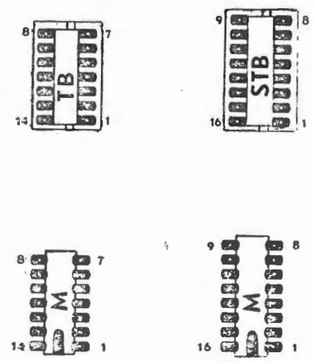
C02

301-0731 C

REVISION HISTORY				
REVISION		DESCRIPTION ROH	DATE	CHK
A		RELEASED		







PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
40	M8,9
39	M18
38	CR1
~~37~~	~~C6 - C11~~
34	R8,11,12,13
24	C5
23	C3, C4
22	C1, C2
21	R7
20	R3
19	R1,2,4,5,6,9,10
18	STB 12,26,42,65,66,67
17	TB 69
~~16~~	~~M 7, 8, 9~~
~~15~~	~~M 1 3~~
14	M 5, 14
13	M 55, 56, 57
12	M22,29,32,37,44,30,59,60,68
11	M2,3,4,13
10	M41, 47, 48, 53, 70
9	M 21
8	M17, 49
7	M 54
6	M27, 36, 61
5	M19, 24, 33, 39
4	M11,20,31,34,46,52
3	M1, 6, 10, 23, 28
2	M30,40,51,55,62, 63
1	M15,16,25,35,39,43,45,54

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 41, AND MARK ASSY. NO 001-04-02-705 C AND LATEST ASSY REVISION.
3. THIS ASSEMBLY DRAWING REPLACES THE ASSEMBLY DRAWING USING REV. 'B' ARTWORK. (BOARDS NEVER PURCHASED AT ARTWORK REVISION 'B.')

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 001-04-03-705 REV. C

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

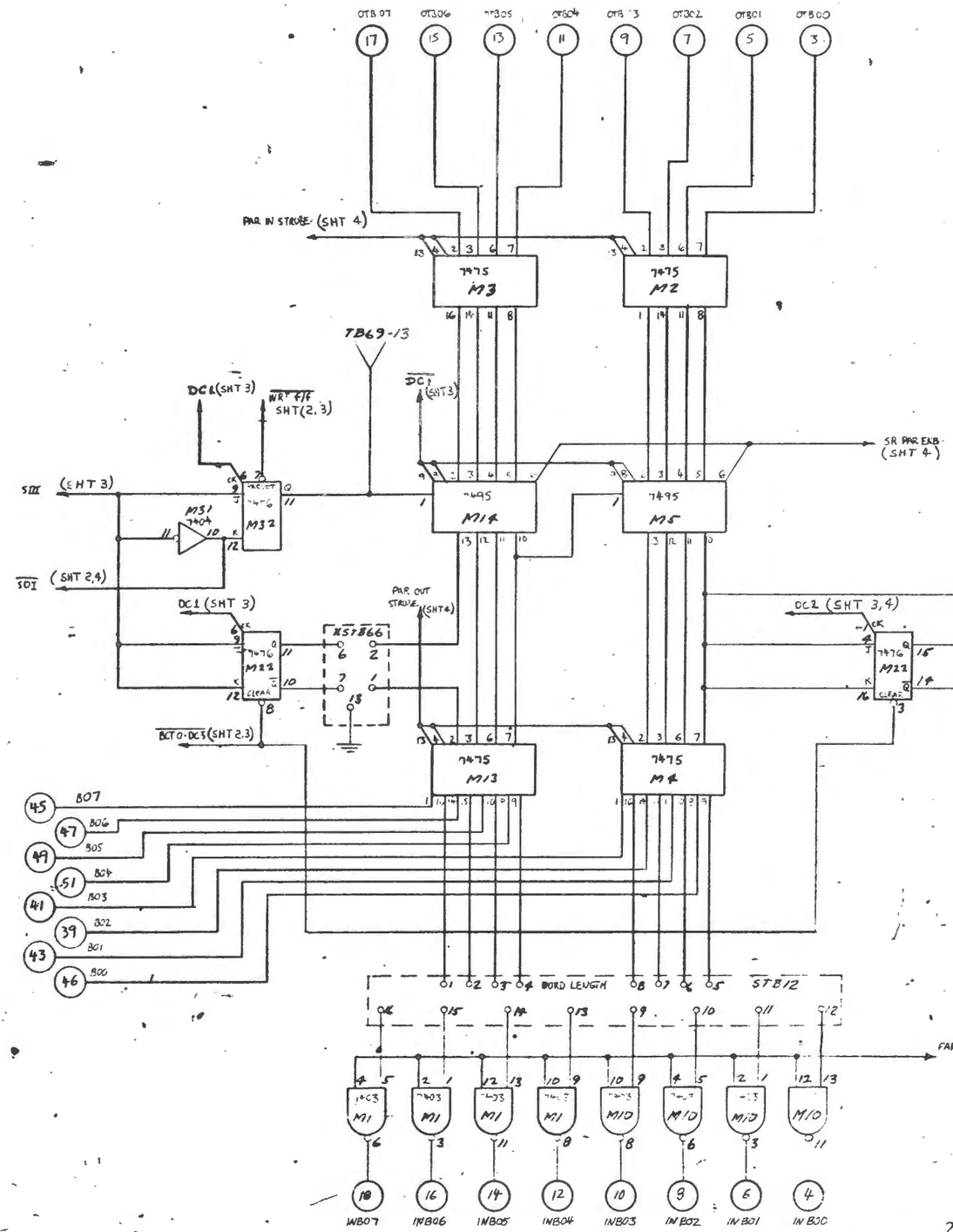
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2

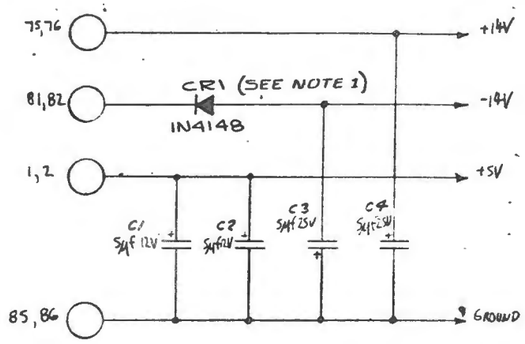
DRN [illegible] DATE 5/22
ENG R.A. Hall DATE 5/22
APPD [illegible] DATE [illegible]
NEXT ASSY [illegible] 12-00

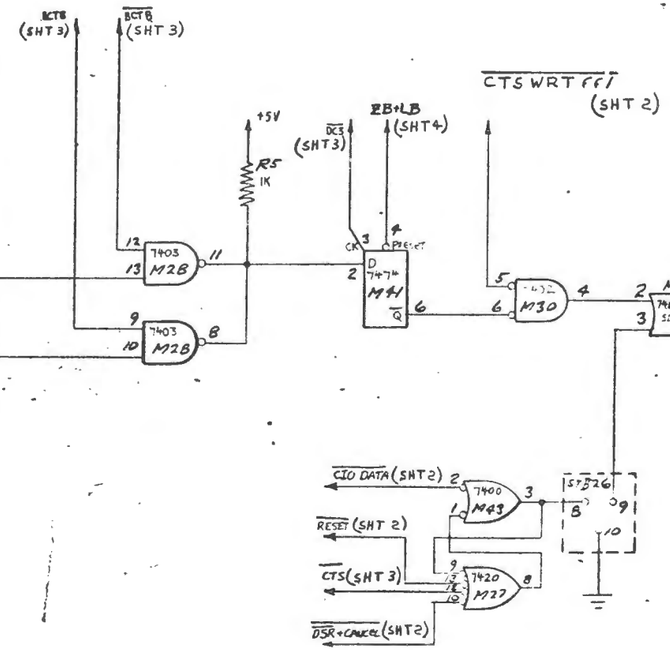
P.C. BOARD ASSY
ASYNCHRONOUS
705C

SIZE D | 001-04-02 | REV A4
SCALE 1:1 | SHT 2 OF 2

REVISION HISTORY				
REVISION		DESCRIPTION	CHK	APPD
A		RELEASED		
B		REVISED PER ECO # 2136		
C		REVISED ECO 2292		



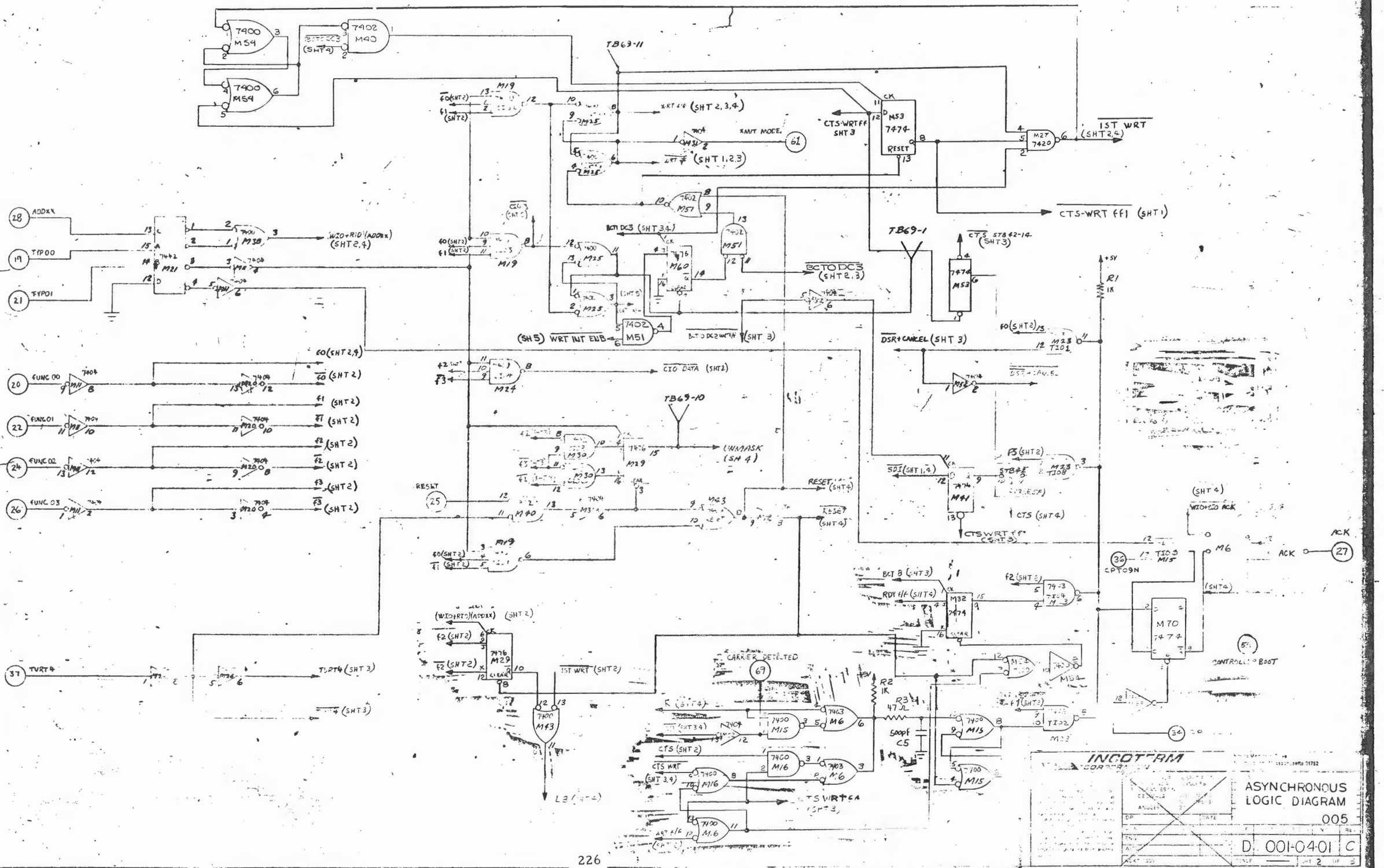




NOTE:
1. CR1 APPLICABLE ON BRDS USING ARTWORK REV. B AND UP.

INCOTERM CORPORATION
Marlborough Massachusetts 01752

ASYNCHRONOUS LOGIC DIAGRAM
005
D 001-040 11 C


7400 M54
7402 M40
BCTO DC3 (SHT 4)
TB63-11
M19
XMIT MODE
61
CTS-WRT FF SHT 3
M53 7474 RESET
M27 7420
1ST WRT (SHT 2,4)
CTS-WRT FF1 (SHT 1)
28 ADDR X
19 TYP00
21 TYP01
WIO+RID (ADDR X) (SHT 2,4)
BCTO DC3 (SHT 3,4)
M51
M60
TB69-1
BCTO DC3 (SHT 2,3)
CTS 578 62-14 (SHT 3)
+5V
R1 1K
(SH 5) WRT INT ENB
BCTO DC2 WRITE (SHT 3)
DSR+CANCEL (SHT 3)
20 FUNC 00
22 FUNC 01
24 FUNC 02
26 FUNC 03
CID DATA (SHT 2)
TB69-10
UNMASK (SH 4)
RESET (SHT 4)
25 RESET
SDI (SHT 1,4)
CTS (SHT 4)
CTS WRT FF (SHT 3)
(SHT 4)
WIO+CID ACK
ACK
27 ACK
34 CPTO9N
M70 7474
CONTROLLER BOOT
(WIO+RTS)(ADDR X) (SHT 2)
1ST WRT (SHT 2)
37 TURT4
TURT4 (SHT 3)
CARRIER DETECTED
69
RDY F/F (SHT 4)
BCT B (SHT 3)
R2 1K
R3 47 JL
500pf C5
INCOTERM
ASYNCHRONOUS LOGIC DIAGRAM
005
D 001-04-01 C

REVISIONS			
REV	DESCRIPTION	CHK	APPD

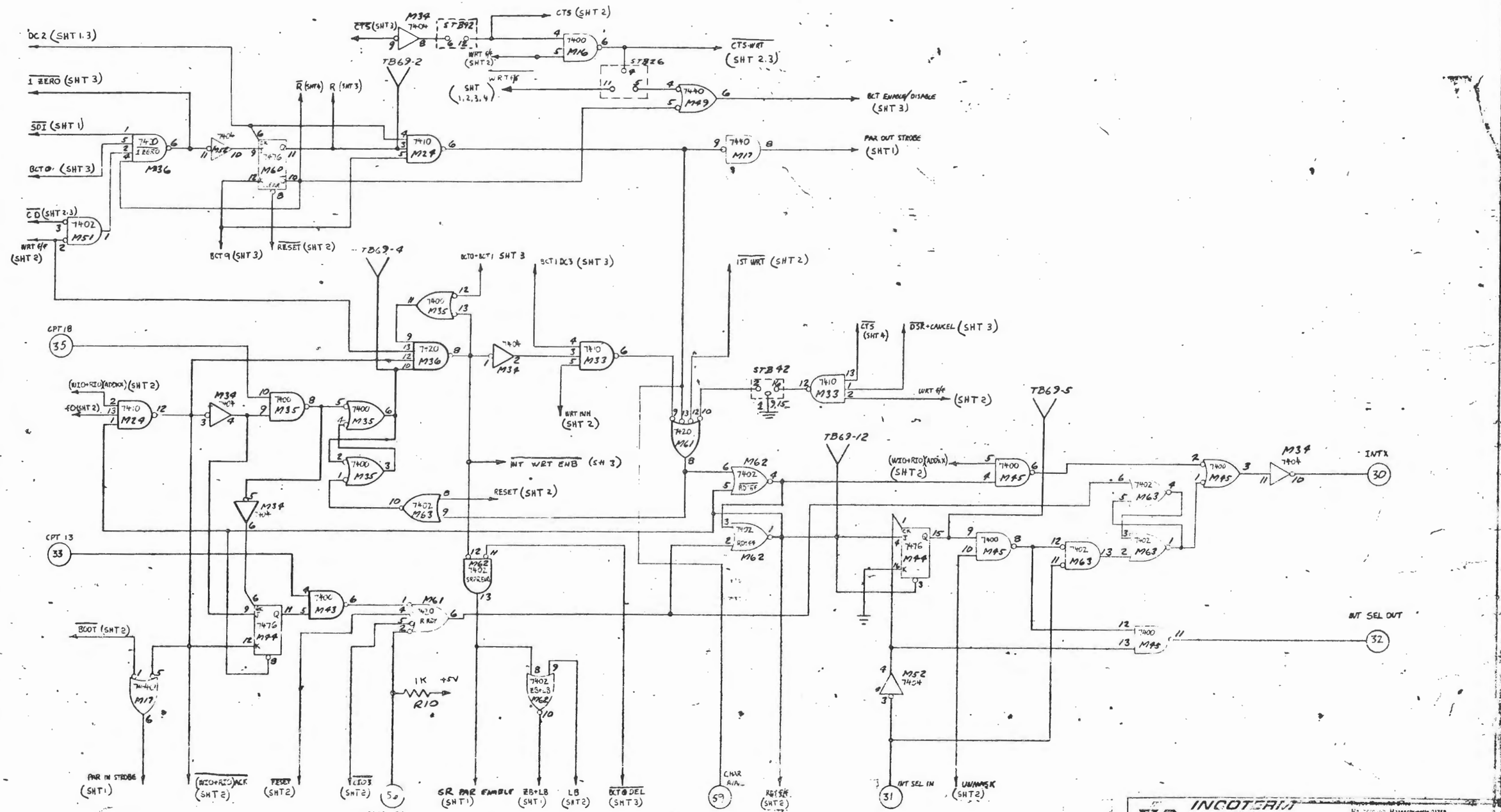
APPLICABLE TO BOARD USING ARTWORK REV. B & UP. SEE SHEET 5 FOR BOARD ASSY USING ARTWORK REV. A.

INCOTERM CORPORATION
Mar borough, Massachusetts 01752

ASYNCHRONOUS LOGIC DIAGRAM
005

D 001-04-01 C

SHT 3 OF 5

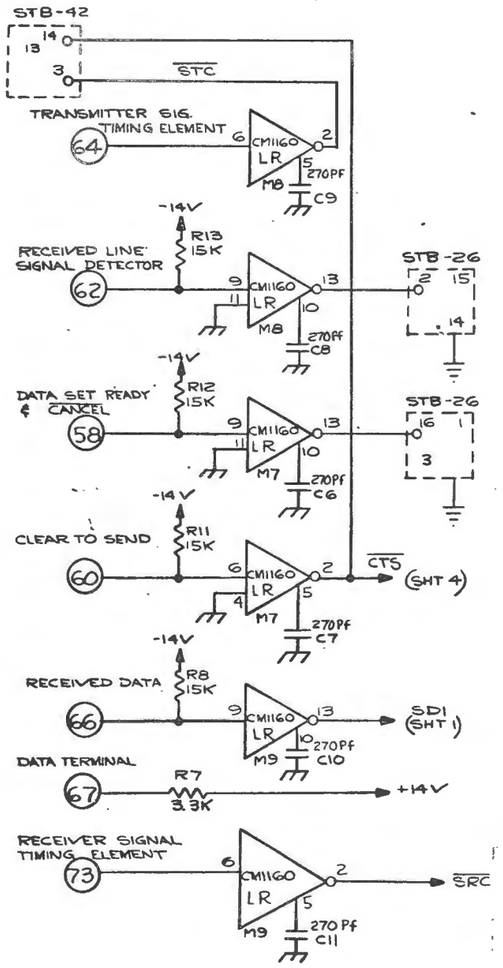


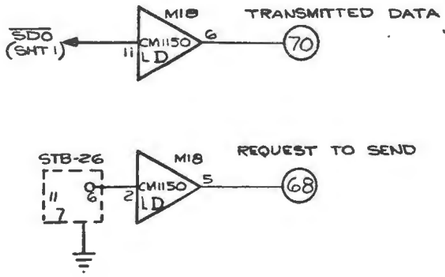
INCOTERM CORPORATION
Mansfield, Massachusetts 01752

ASYNCHRONOUS LOGIC DIAGRAM
005

SIZE D | DWG NO 001-0401 | REV C
SCALE — | SHT 4 OF 5

REVISIONS			
REV	DESCRIPTION	CHK	APPD





APPLICABLE TO P.C. BOARDS USING ARTWORK REV. A ONLY. SEE SHEET 3 FOR BOARDS ASSY WITH ARTWORK REV. B AND UP.

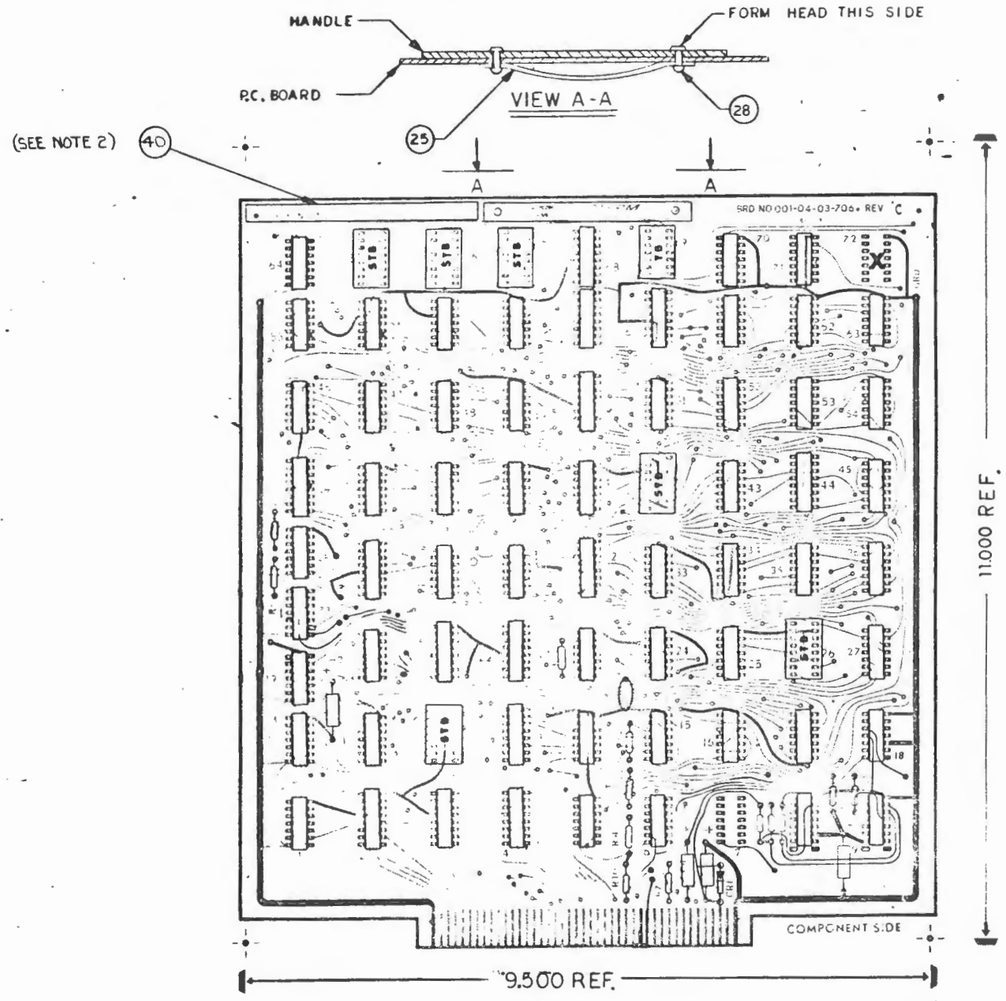
"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

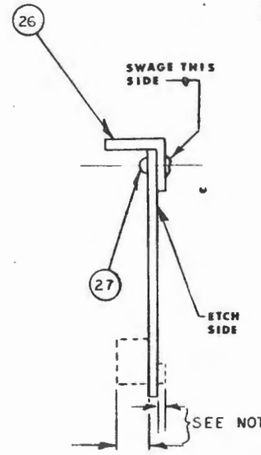
INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

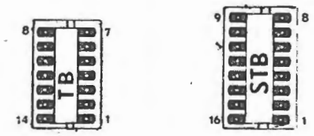
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (.13mCS) .02 (.5mCS)
ANGLES 2°

DR	DATE	TITLE			
CHK		ASYNCHRONOUS LOGIC DIAGRAM			
ENG					005
APPD		SIZE	P.C.	S.S.	NO.	REV
NEXT ASSY		D	001-04-01			C
		SCALE —	SHT 5 OF 5			

REVISION HISTORY				
REVISION		DESCRIPTION RD#423	DATE	CHK
A		RELEASED	3-7-72	
B		REVISED/ECO1876 5/8/72	8/4	
	B1	ECO1936 SEE SHT1 FOR CONTINUING REVISION ASSIGNMENT HISTORY		







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO:	REFERENCE DESIGNATION
45	M8,9
44	M18
43	CR1
40	
39	
38	
~~37~~	~~C6 C11~~
34	R8 11,12,13
24	C5
23	C3 C4
22	C1 C2
21	R7
20	R3
19	R1,2,4,5,6,9,10
18	STB12,26,42,65,66,67
17	TB 69
~~16~~	~~M7 8 9~~
~~15~~	~~M15~~
14	M5,14
13	M55,66,67
12	M22,23,37,44,3059,60,68
11	M2,3,4,13
10	M41, 47, 48, 53, 70
9	M21
8	M17, 49
7	M64, 73
6	M27, 36, 61
5	M19,24,33,39
4	M11, 20,31,34,46,52
3	M1, 6,10,23, 28
2	M30,40,51,58,62,63
1	M15,16,25,35,38, 43,45,64,71

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 40, AND MARK ASSY. NO. 001-04-02-706C AND LATEST ASSY. REVISION.
3. THIS ASSEMBLY DRAWING REPLACES THE ASSEMBLY DRAWING USING REVISION 'B' ARTWORK. (BOARDS NEVER PURCHASED AT ARTWORK REVISION 'B.')

ASSY WITH ARTWORK 001-04-03-706 REV C

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS .005 3 PLACES .02 2 PLACES ANGLES

DRN | DATE | APP | DATE | MFG | DATE

TITLE: P.C. BOARD ASSY ASYNCHRONOUS 706C

SIZE	P/O	S/S	NO	REV
D	001-04-02			B8

NEXT ASSY 210-10-02 | SCALE 1:1 | SHT 4 OF 4

REVISION HISTORY				
REV		DESCRIPTION P.O. # 423	CHK	APPD
A		RELEASED 3-7-72		
B		REVISED/ECO 1876 3/19/72		
C		REV & REDRAWN E.O 2183		
D		REVISED/ECO 2293 3/6/73		

OTB 07 OTB06 OTB05 OTB04 OTB03 OTB02 OTB01 OTB00

17 15 13 11 9 7 5 3

(M17-6) PAR IN STROBE (SHT 4)

7475 M3 7475 M2

TB69-13

(M49-8) DC1 (SHT3)

(M31-8) DC1 (SHT 3) (M25-6) WRT FF1 (SHT 2)

(M9-12) SDI (SHT 3)

M31 7404 M32

(M41-12)(SH 2) SDI
(M36-1)(SH 4)

(M17-8) PAR OUT STROBE (SHT4)

(M31-8) DC1 (SHT 3)

7495 M16 7495 M5

SR PAR ENAB (SHT 4) MG2-13 TB69-8

(M39-10) DC2 (SHT 3)

7476 M22 7476 M21

K5T866 K5T866

BCTO-DC3 (SHT 3)

(M38-8)

7475 M13 7475 M4

45 807
47 806
49 805
51 804
41 803
39 802
43 801
46 800

STB12 1 2 3 4 BORD LENGTH 8 7 6 5

PAR IN STROBE (SHT 4) (M17-6)

7403 M1 7403 M1 7403 M1 7403 M1 7403 M10 7403 M10 7403 M10 7403 M10

10 16 14 12 10 8 6 4

IN807 IN806 IN805 IN804 IN803 IN802 IN801 IN800

75,76 +14V

81,82 -14V

CR1 IN4148

1,2 +5V

C1 5μf 12V C2 5μf 25V C3 5μf 25V C4 5μf 25V

85,86 GROUND

(M58-10) (M46-12)

ECTB (SHT 3) BCTB (SHT 3)

(M38-6) (MG2-10) ZB·LB (SHT4)

+5V R5 1K

5K3 (SHT 3)

7403 M28 7403 M28

7474 M41

CTS WRT FF1 (SHT 2)

(M53-8)

7402 M30 7402 M30

SDO (SHT 3) (M18-12)

(M20-12) (SH 2) FO (SHT2) 4
(M-20-10)(SH 2) F1 (SHT2) 3
(M20-8) (SH 2) F2 (SHT2) 2
(M20-4) (SH 2) F3 (SHT2) 1
(M11-4) (SH 2) (CIO·ADDxx) (SHT2) 5

7430 M73

(M24-8) CIO DATA (SHT2) 7400 M43

(M52-8) RESET (SHT 2) 7420 M27

STB26

RTS (SHT 3) (M71-2)

APPLICABLE TO P.C.BOARD ARTWORK
001-04-03-706 REV.B OR GREATER

INCOTERM CORPORATION Marlborough, Massachusetts 01752

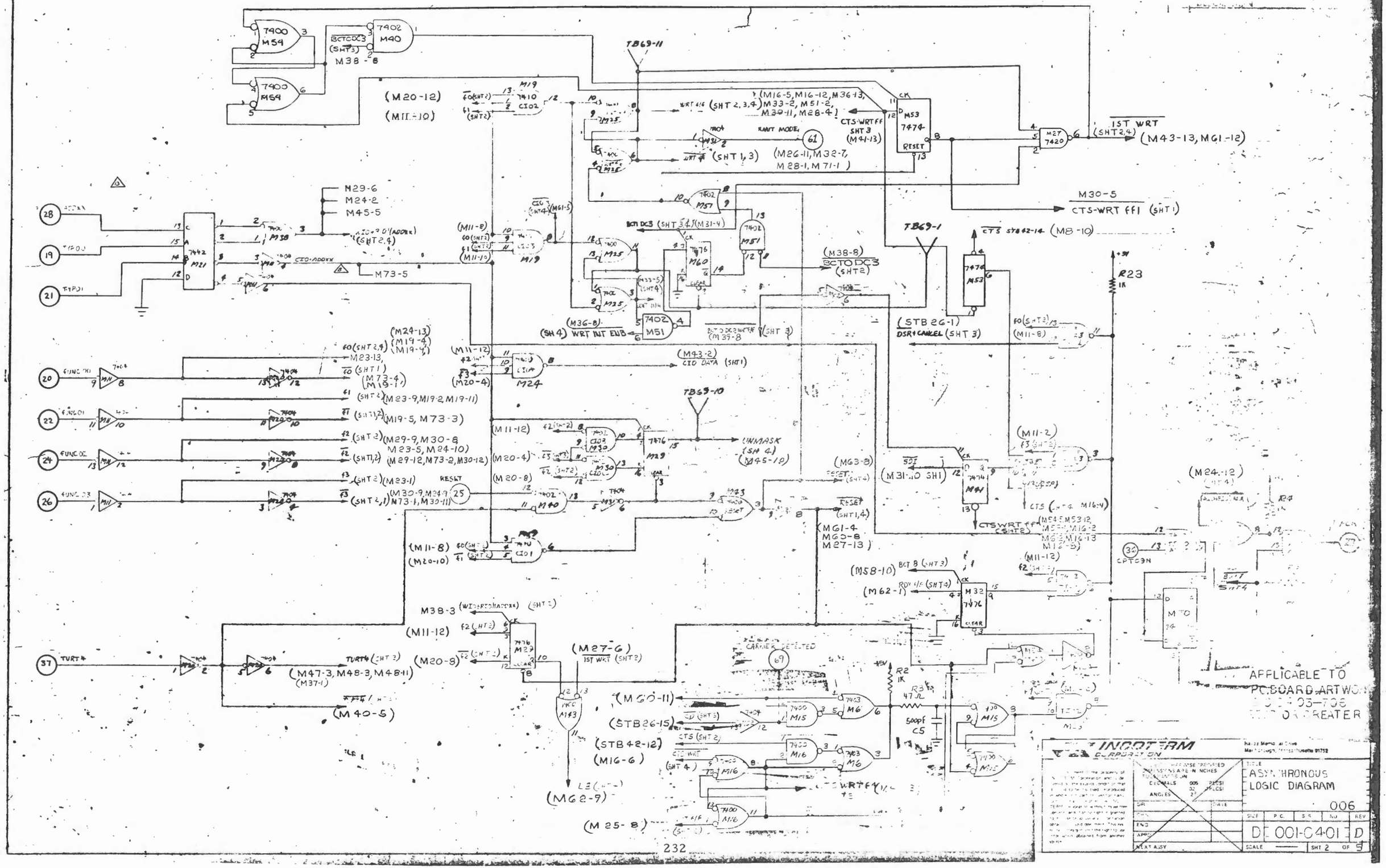
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .00 ±PLCS .02 ±PLCS ANGLES 2°

TITLE ASYNCHRONOUS LOGIC DIAGRAM

006

D 001-04-01 D

SIZE — SHT 1 OF 15


7400 M54
7402 M40
BCTCDC3 (SHT3)
M38-8
TB69-11
(M20-12)
(M11-10)
M19 7410 C102
(M16-5, M16-12, M36-13, M33-2, M51-2, M39-11, M28-4)
WRT 4/6 (SHT 2,3,4)
CTS-WRT FF SHT 3 (M41-13)
XMIT MODE
61
WRT # (SHT 1,3)
(M26-11, M32-7, M28-1, M71-1)
M53 7474 RESET
M27 7420
1ST WRT (SHT 2,4)
(M43-13, M61-12)
M30-5
CTS-WRT FF1 (SHT 1)
M29-6
M24-2
M45-5
M38
M21 7442
CIO-ADDRX
M73-5
(M11-8)
(M20-9)
M19 C103
M25
M35
M57 7402
BCT DC3 (SHT 3,4) (M31-4)
M51 7402
M60 7476
(M38-8) BCTODC3 (SHT2)
TB69-1
CTS STB42-14 (M8-10)
M53 7474
(STB2G-1) DSR+CANCEL (SHT 3)
R23 1K
+5V
(M24-13)
(M19-4)
(M19-6)
GO(SHT2,3) M23-13,
(M73-4, M18-1)
(M23-9, M19-2, M19-11)
(M19-5, M73-3)
(M29-9, M30-8, M23-5, M24-10) (M29-12, M73-2, M30-12)
(M23-1)
(M30-9, M24-9, M73-1, M30-11)
RESET
25
(M11-12)
(M20-4)
(M20-8)
M24 C104
(M43-2) CID DATA (SHT1)
M30 C105
M29 7476
UNMASK (SH 4) (M45-10)
M40 7402 C101
(M11-8) (M20-10)
TB69-10
(M63-8) RESET (SHT4)
(SHT1,4)
(MG1-4, MG0-8, M27-13)
(M11-2)
CTS (SHT4 M16-4)
CTSWRT FF (SHT2)
(M58-10) BCT B (SHT3)
(M62-1) RDY 1/C (SHT4)
M32 7476
(M24-12)
(SHT4)
34
CPTC3N
M38-3 (WRITE/READ) (SHT 2)
(M11-12)
(M20-8)
M29 7476
(M27-6) 1ST WRT (SHT2)
CARRIER DETECTED
69
R2 1K
R3 47
500pf C5
(MG0-11)
(STB26-15)
(STB42-12)
(M16-6)
M6 7403
M15 7400
M16 7400
(M40-5)
(MG2-9)
(M25-8)
APPLICABLE TO P.C.BOARD ARTWORK 001-703-705 AND/OR GREATER
INCOTERM CORPORATION
Hayden Memorial Drive
Marlborough, Massachusetts 01752
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 .010 .030
ANGLES 30' 15' 1°
DR
CHK
ENG
APPD
NEXT ASSY
DATE
TITLE
ASYNCHRONOUS LOGIC DIAGRAM
006
SIZE P.C. S.R. NO. REV
D 001-0401 D
SCALE
SHT 2 OF 5

REVISIONS

REV	DESCRIPTION	CHK	APPD

(M16-6) CTS·WRT (SHT4)
(M35-6)
(M46C-10) R (SHT4)
(M49-8) RI (SHT 3)
(M38-6) X3 (SHT 3)
M33 M39
(M20-6) TURT4 (SHT 2)
(M20-2) TURT4 (SHT2)
7493 DVBY2 M55
7493 DVBY3 M56
7493 DVBY4 M57
XST865 XST866
7402 STCK M40
7476 DCDI M49
(M25-8) WRT CK
DCK1 M28
DCK3 M46
DCK2 M37
DCK7 M28
(SHT2) (M25-6)
STB-42
SRC (SHT3) (M9-13)
+5V R6 K
TB69-7
TB69-9
TB69-14 TB69-6
(M20-6) TURT4 (SHT 2)
M47 M48
7402 DC2 M40
7400 DC1 M49
7400 DC3 M38
DC2 (SHT 1,3,4) (M22-1, M24-4, M60-6, M39-10)
DC1 (SHT 1) M22-6, M32-6
DC1 (SHT 3,4) (M39-4, M14-8, M14-9, M5-8, M5-9, M50-1, M50-6, M59-1, M59-6, M68-1, M68-6)
DC3 (SHT 3) (M47-11, M39-13, M38-10)
DC3 (SHT 1,2) (M39-3, M41-3)
M31 M46
STB 42
STC
TRANSMITTER SIGNAL TIMING ELEMENT
64
SN75154 LR M8
+5V
-14V R13 18K
RECEIVED LINE SIGNAL DETECTOR
62
SN75154 LR M9
STB26
CD (SHT 2,4) (M51-3, M52-13)
-14V R12 18K
DATA SET READY + CANCEL
58
SN75154 LR M9
STB26
CANCEL+DSR (SHT 2,4) (M33-1, M23-12)
(M30-1) SDO (SHT1) M18 TRANSMITTED DATA
M18 LA36/G LD
70
-14V R11 18K
CLEAR TO SEND
60
SN75154 LR M9
CTS (SHT2,4) (M53-4, M33-13, M34-9)
STB26
WRT CK
(SHT 2) (M25-6)
M18 LA36/G LD
REQUEST TO SEND
68
-14V R8 18K
RECEIVED DATA
66
SN75154 LR M9
SDO (SHT1) (M32-9, M31-11, M22-9, M22-12)
M27-8 RTS (SHT1)
7400 M71
7400 M71
DATA TERMINAL READY
R7 3.3K
+5V
67
RECEIVER SIGNAL TIMING ELEMENT
73
SN75154 LR M9
+5V
(SHT 3) (STB 42-5) SRC
M48 DC1 (SHT 3)
(M49-6) BCT ENABLE/SHIFT (SHT 4)
7476 M50 M59 M59 M68 M68
ST867
ST862
(M40-10) (M46-6)
(M46-4) DC5 (SH 4)
DC2 (SHT 3) DC3 (SHT 3)
(M25-8) WRT CK (SHT 2)
7410 M39
7400 M38
7402 M58 BCTO
7474 M47
DC3 (SHT 3) M46-6
7402 BCTO+BCT1
7410 M39
7402 BCTE M58
7402 BCT8 M58
TB69-3
BCTO DCE WRT/R (SHT 2)
BCTO BCS (SHT1,2)
BCTO (SHT 4)
BCTO DEL (SHT4)
BCTO+BCT1 (SHT 4)
BCT1 DC3 (SHT2,4)
BCTE (SHT1)
BCT8 (SHT 1,2)
BCT9 (SHT4)
(M52-5) (M40-2, M51-11, M22-8, M22-3) (M36-5) (M62-11) (M35-12) (M33-4, M60-1, M27-2) (M28-12) (M28-9, M32-1) (M60-12, M24-5)

APPLICABLE TO P.C.BOARD ARTWORK 001-04-03-706 REV.B OR GREATER

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

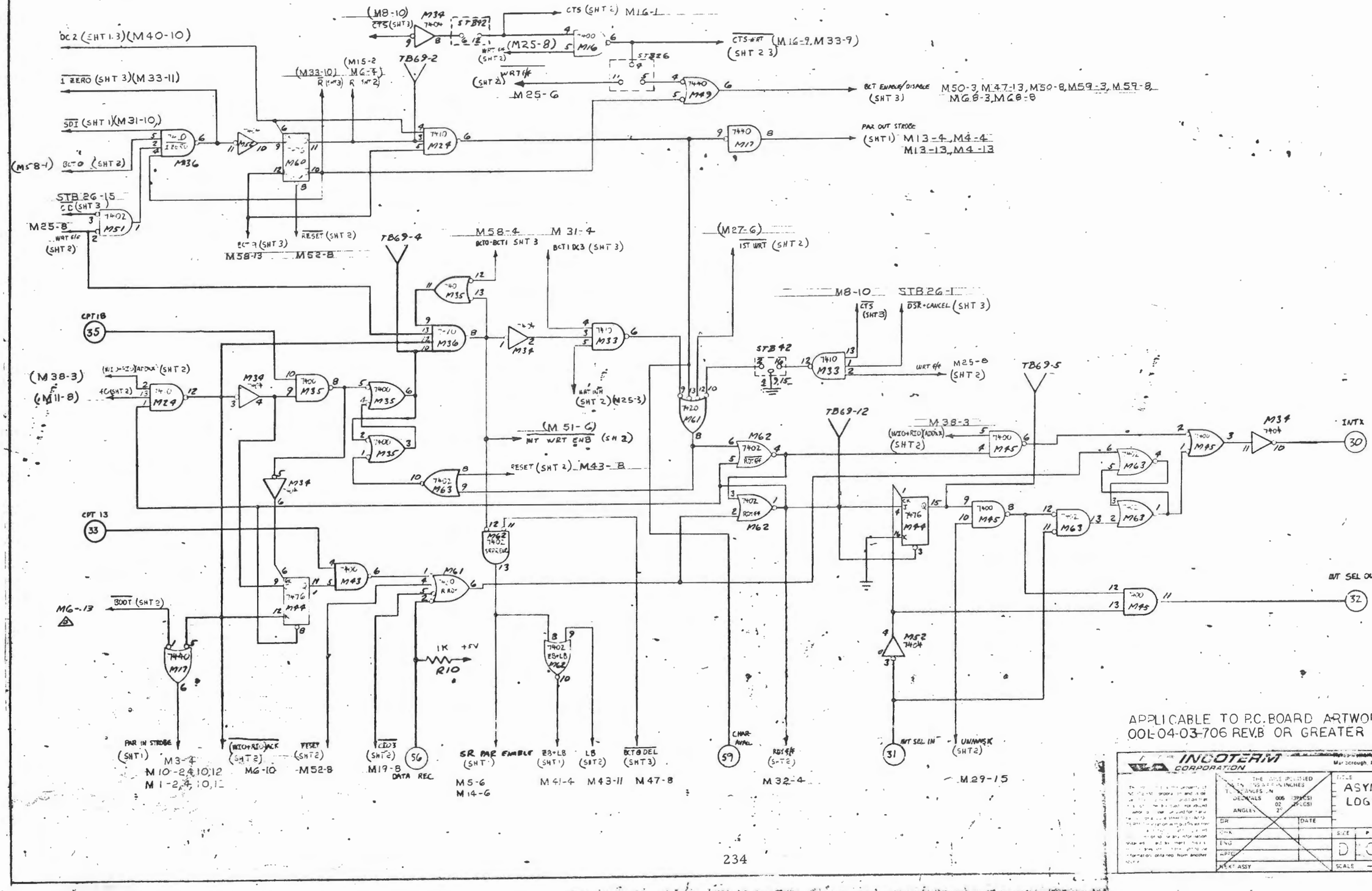
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (.13 M.C.S) .010 (.25 M.C.S)
ANGLES 1/2°

		DATE
DR		
CHK		
ENG		
APPD		
NEXT ASSY		

TITLE
ASYNCHRONOUS LOGIC DIAGRAM
006

SIZE	P.C.	S.S	NO.	REV
D	001-04-01			D

SCALE — SHT 3 OF 5



APPLICABLE TO P.C. BOARD ARTWORK
001-04-03-706 REV.B OR GREATER

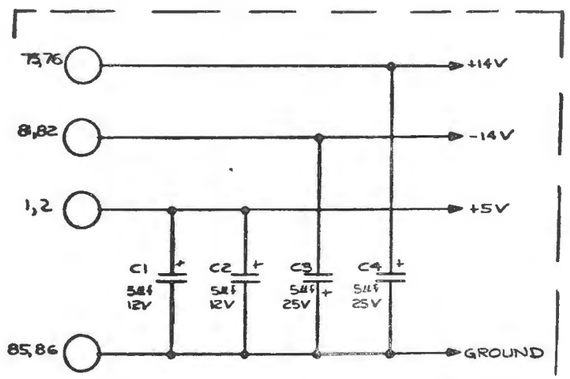
INCOTERM CORPORATION
Marlborough, Massachusetts 01752

ASYNCHRONOUS LOGIC DIAGRAM 006

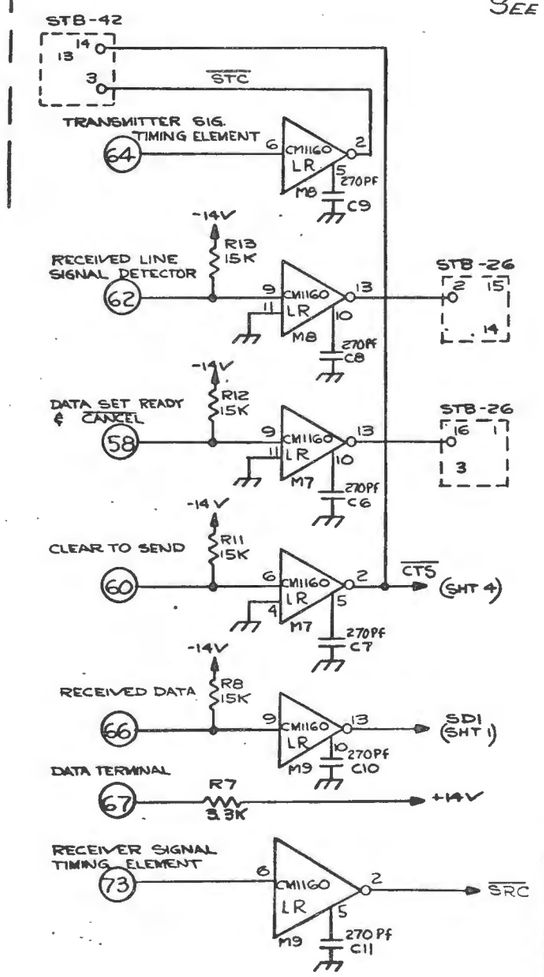
SIZE D | P.C. 001-04-01 | REV D | SCALE — | SHT 4 OF 5

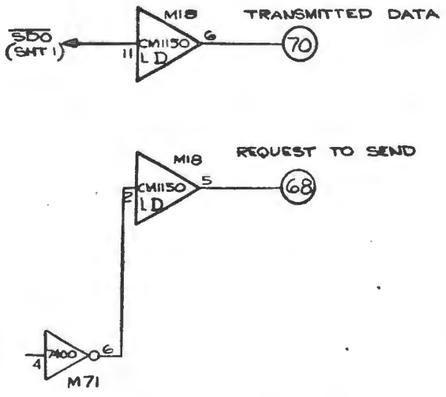
REVISIONS			
REV	DESCRIPTION	CHK	APPD

SEE SHT 1



SEE SHT 3





APPLICABLE TO P.C.BOARD ART WORK
001-04-03-705 REV.A ONLY

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

INCOTERM CORPORATION
Wayne Hunnold Drive
Marlborough, Massachusetts 01752

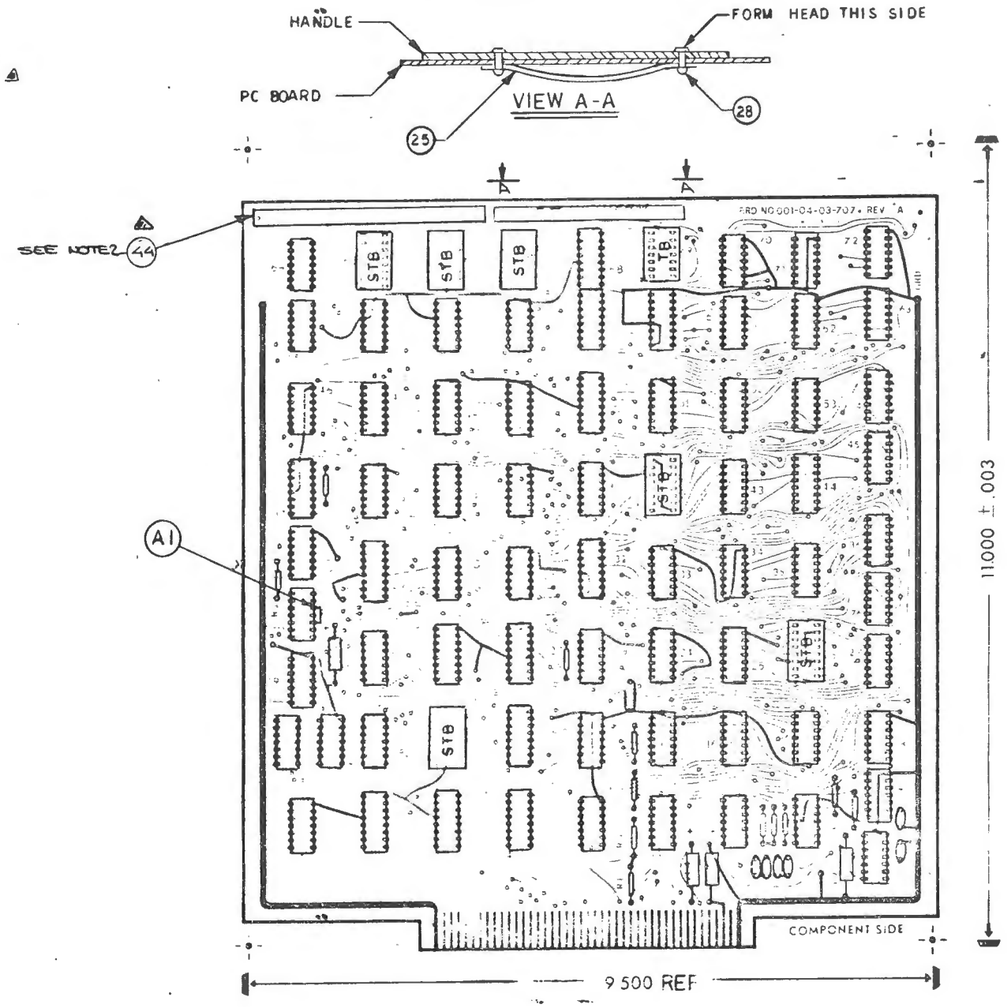
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS .XXX ±.010 .XX ±.020
ANGLES ±2°

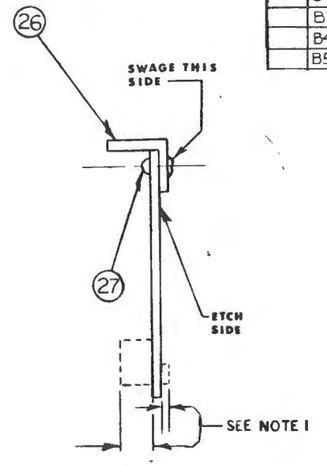
TITLE
ASYNCHRONOUS LOGIC DIAGRAM
006

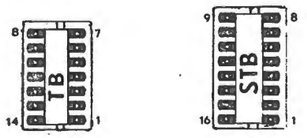
		SIZE	P.C.	S.S.	REL	REV
DR	DATE					
CHK		D	001-04-01			D
ENG						
APPD						
NEXT ASSY		SCALE		SHT 3 OF 5		

REVISION HISTORY				
REVISION		DESCRIPTION (REF 46-7)	DATE	CHK
A		RELEASED		
B		REVISED PER ECO 2143	9/24/82	
	B1	REVISED/ECO 2186	12/15/82	
	B2	REV CHANGE ONLY/ECO 2270		
	B3	REVISED, ECO 2296		
	B4	REV. CHANGE ONLY/ECO 2378		
	B5	REV. CHANGE ONLY/ECO 2477		

ADD WIRE ITEM 40 FROM
A1 M73 PIN 3 TO M73 PIN 5







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
37	C6-C11
34	R8.11,12,13
25	
24	C5
23	C3,C4
22	C1, C2
21	
20	R3
19	R1,2,3,5,6,9,10
18	STB 1,2,26,42,55,56,67
17	TB9
16	M7,8,9
15	M15,75
14	M5,14
13	M55,57,71
12	M22,29,32,37,44,50,59,60,65
11	M 2,3,4,13
10	M 41,47,48,53,70
9	M21
8	M 17,29
7	M64
6	M27,35,61,73
5	M 1,24,33,39,45
4	M 11,20,31,34,46,52
3	M 1,6,10,23,28
2	M30,40,51,58,62,63,71,74,76
1	M5,16,25,35,38,43,54,72

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REV. LABEL ITEM 44, AND MARK ASSY NO; CO1-04-02-707 B AND LATEST ASSY REVISION.

ITEM	PART NO	DESCRIPTION	QTY
43	ICSN75154	IC 16 PIN (B11)	2
42	IGJGA3G1659X	IC 14 PIN (A39)	2
41	DSIN4148	DIODE	2
40	C324SCLWHT	WIRE #24 GA SOLID WHITE	.25M
57	CS5GAT27	CAP. 270 pf 300V ± 10%	6
16	ICCM1160	IC 14 PIN (CERMETEX)	3
15	ICCM1150	IC 4 PIN (CERMETEX)	1

ASSY WITH ART WORK 001-04-03-707 REV A

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON: DECIMALS .005 2PLCS .07 3PLCS ANGLES 2°

DR [illegible] DATE 8-24-77
CH [illegible] DATE 8/26/82
APPD [illegible] DATE 8/26/82

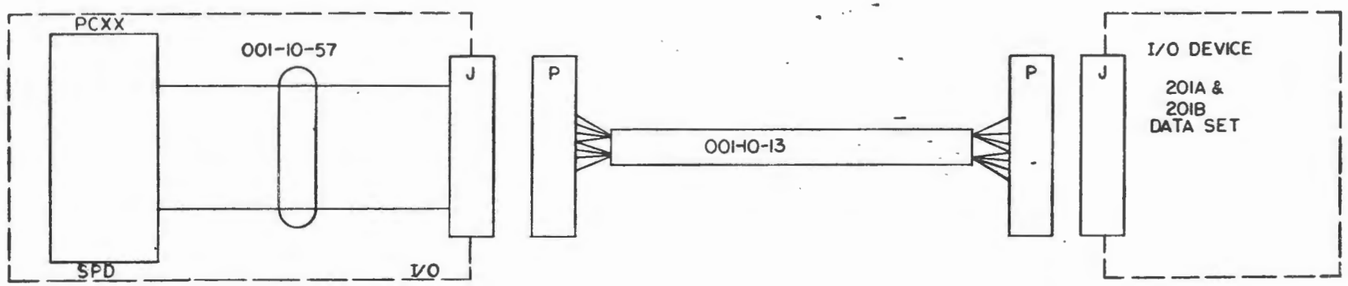
NEXT ASSY 010 10 00

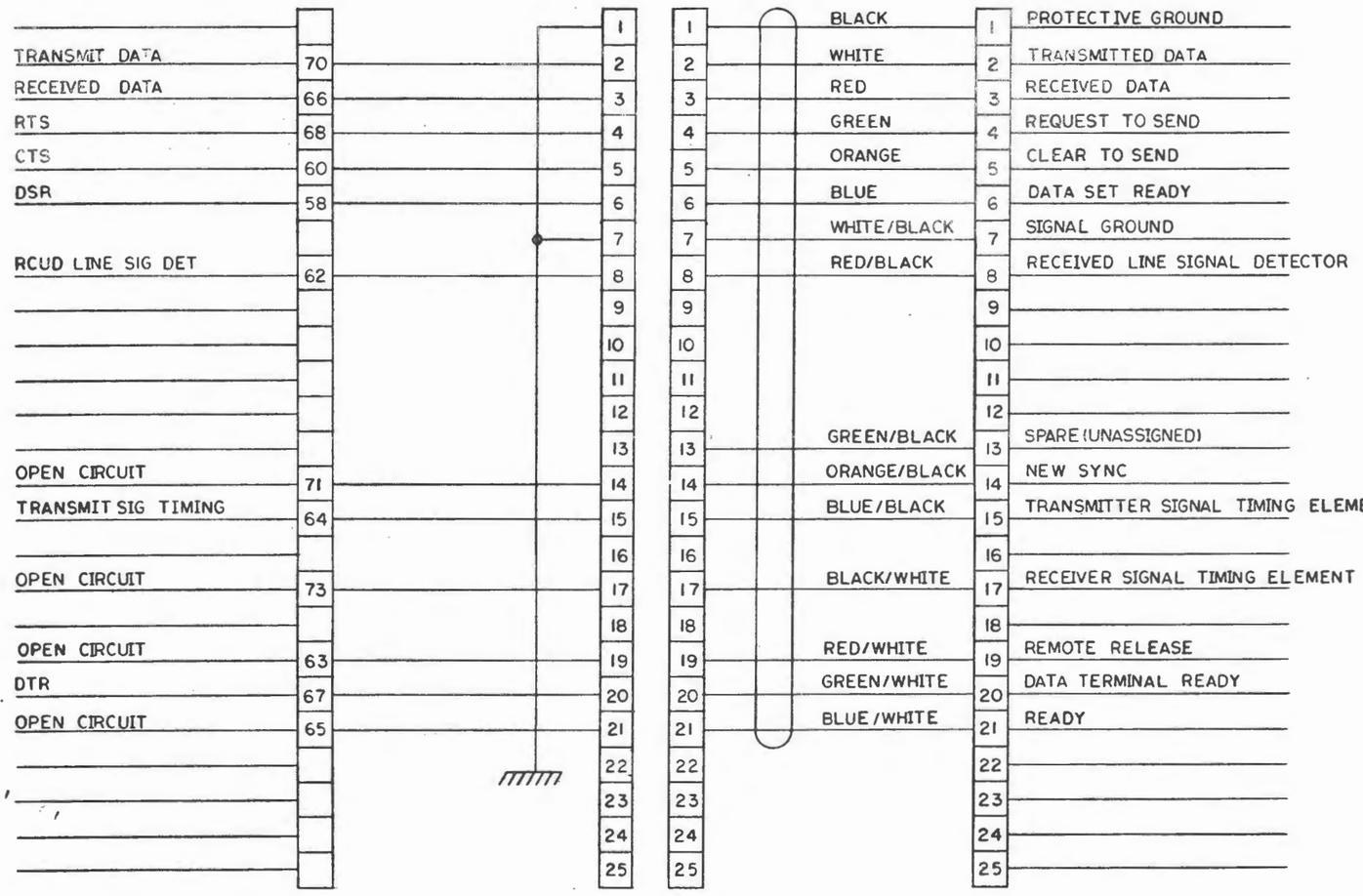
P.C. BOARD ASSY
ASYNCHRONOUS
707A

SIZE	P.C.	SYS	NO.	REV
D	001-04-02			B5

SCALE 1:1 SHT 1 OF 2

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD





SIGNAL NAME (LOGIC) | PCXX → I/O WIRE | I/O CABLE COLOR CODE | DEVICE SIGNAL NAME

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to a sclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

DR AN R BULMER	5/21/75	
CHECKED FCC	5/22/75	
ENGINEER	5-23-75	
APPROVED	DATE	
FIRST USED ON 001-04-02-707		

ASYNCHRONOUS CONTROLLER LOGIC DIAGRAM 007

SIZE D | DOCUMENT NUMBER 001-04-01 | REV D1

SCALE | SHT 8 OF 8

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
D1	REV & REDRAWN, ECO 2548		

(SH6) ZB

(SH6) PAR OUT STROBE

OTB00 (3)
OTB01 (5)
OTB02 (7)
OTB03 (9)

7475 M2 INPBUF 1

7495 M5 SR1

7475 M4 OUTBUF 1

(46) B00
(43) B01
(39) B02
(41) B03

OTB04 (11)
OTB05 (13)
OTB06 (15)
OTB07 (17)

7475 M3 INPBUF 2

7495 MI4 SR2

7475 MI3 OUTBUF 2

(51) B04
(49) B05
(47) B06
(45) B07

(SH6) PAR IN STROBE

(SH4) DCI *

TB69 13

(SH4) DCI
(SH2) WRT *
(SH5) SDI *

SDI 7404 M31

7476 M32 DATA I

7476 M22 PARITY I

STB66

(M41-12) (SH3) LB DET
(M36-1) (SH6) I ZERO *

TB69-8

7476 M22 PARGEN

(SH4) DC2

(SH4) (BCT 0, DC3) *

STB66

BCT 8 * (SH5)

7403 M28 DATA 0

7403 M28 PARITY 0

(SH5) BCT 8

+5 V

R5 1K

(ZB • IST WRT) * (SH6)

7474 M41 SD0B

DC3 * (SH4)

(CTS • WRT FF 1) * (SH3)

7402 M30 SD0A

SD0 * 7402 M30

XMIT DATA (SH5) (MI8-12)

(SH3) PD/LB

STB26

STB12

WORD LENGTH

INB00 7403 MIO → (4) INB00
INB01 7403 MIO → (6) INB01
INB02 7403 MIO → (8) INB02
INB03 7403 MIO → (10) INB03
INB04 7403 MI → (12) INB04
INB05 7403 MI → (14) INB05
INB06 7403 MI → (16) INB06
INB07 7403 MI → (18) INB07

PAR IN STROBE (SH6)

JUMPER OPTIONS

	FROM	TO	DESCRIPTION
STB 12	1	16	8 DATA BITS
	2	15	
	3	14	
	4	13	
	5	12	
	6	11	
	7	10	
	8	9	
	1	15	7 DATA BITS
	2	14	
	3	13	
	4	9	
	8	10	
	7	11	
	6	12	
	1	14	6 DATA BITS
	2	13	
	3	9	
	4	10	
	8	11	
	7	12	
	1	13	5 DATA BITS
	2	9	
	3	10	
	4	11	
	8	12	
STB 26	9	7	NO PRIORITY DATA OR LINE BREAK
	9	8	FOR PRIORITY DATA (MUX) OR FOR LINE BREAK (NON-MUX)
STB 66	1	13	NO PARITY CHECK
	1	2	TRANSPARENT PARITY
	1	7	EVEN PARITY CHECK
	1	6	ODD PARITY CHECK
	16	13	TRANSPARENT PARITY
	16	3	EVEN PARITY GEN
	16	4	ODD PARITY GEN
	16	—	PARITY ALWAYS "1"

APPLICABLE TO PC BOARD ARTWORK
001-04-03-707 REV B OR GREATER

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 5 TRAFALGAR ROAD, NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corp. in any without its written consent and that no right is granted to disclose or to use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN	K BRAMER	8/7/72
DESIGNED	PCL	8/4/72
ENGINEER		
APPROVED		

ASYNCHRONOUS CONTROLLER LOGIC DIAGRAM 007

SIZE	DOCUMENT NUMBER	REV
D	001-04-01	D1

NEXT USED: 001-04-02-707 SCALE — SHEET 1 OF 8

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

R/WACK*(SH6)(M24-2)
R/W INT*(SH6)(M45-5)
FACK(SH6)(M76-5)
ADDXX (28)
TYP00 (19)
TYP01 (21)
7442 M21 I/O TYP DEC
WIO•T9 7402 M74
WIO+RIO 7400 M38
CIO•T9 7402 M74
TIO•T9 7402 M74
WIO*
RIO*
CIO*
TIO*
TIOACK (SH3)(M70-11)
STB26-12(SH5)
7476 M29 DTR
CLR* (SH2)
7400 M15
WIO8*
RTS(M70-4)(SH2)
7410 M19
CIO2*
T9*
CPT09 (36)
7404 M11
RESET (25)
7402 M40
RES•T9
FACK(SH6)(M76-6)
R/WACK*(SH6)(M24-13)
TIO1*(SH3)(M23-13)
R/WINT(SH6)(M45-3)
FØ
FUNC00 (20)
7404 M11
FØ*
7404 M20
7410 M19
CIO3*
RRDY(SH6)(M61-5)
FNØ*
7420 M73
TIO2(SH3)(M23-9)
F1
FUNC01 (22)
F1*
7410 M19
CIO1*
TIO4(SH3)(M23-5)
F2
FUNC02 (24)
F2*
7410 M24
CIO4*
TIO8*(SH3)(M23-1)
F3
FUNC03 (26)
F3*
WRT 7400 M25
DATA I(SH1)(M32-7)
DCK2*(SH4)(M28-1)
STB26-11(SH6)
CTS•WRTFF1 (SH3)(M53-13)
WRT*
READ 7400 M25
READ* 7400 M25
WSGO*(SH6)(M33-5)
TB69-11
XMIT 7404 M31
(CTS•WRT)*(SH6)(M16-5)
CD•WRT*(SH6)(M51-2)
CTS•WRTFF*(SH3)(M16-12)
RTSA*(SH2)(M71-8)
BCTØ•DC2•WRT*(SH4)(M39-11)
1ST WRT*(SH3)(M27-4)
DCK1*(SH4)(M28-4)
WRTINTENB*(SH6)(M36-13)
CDCW*(SH6)(M33-2)
61 XMIT MODE
TB69-1
WRTINTENB*(SH6)(M36-8)
7402 M51 TREN
BCT1•DC3(SH5)(M31-4)
7476 M60 TR
7402 M51
(CL+TR)*
(BCTØ•DC3)*(SH4)
7402 M30 CI08
7476 M29 UNMASK
TB69-10
RSTRT*(SH6)(M63-8)
INTEN*(SH6)(M72-13)
7402 M30 CIDC
7404 M31
(RES•T9)*
7400 M43 CLR
CLR*
7404 M52
PD/LB*(SH3)(M27-13)
RD(SH6)(M60-8)
CLROVRN(SH3)(M54-12)
DSE*(SH3)(M15-4)
DTR(SH2)(M29-8)
RRDY(SH6)(M61-4)
(CIO•T9)*
7404 M11
7402 M74 CIØ*
WIO8*(SH2) M15-11
7474 M70 RTS/
WRT (SH2)
7402 M71 RTSA*
RTS(SH5) (STB26-10)
PD/LB (SH3)(M43-2)

APPLICABLE TO PC BOARD ARTWORK
001-04-03-707 REV B OR GREATER

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN R.E.L.-MER 3/16/73
CHECKED [illegible] 3/21/73
ENGINEER [illegible] 3/21/73
APPROVED DATE

ASYNCHRONOUS CONTROLLER LOGIC DIAGRAM 007

SIZE D | DOCUMENT NUMBER 001-04-01 | REV D1

NEXT ASSY USED ON 001-04-02-707 | SCALE | SHT 2 OF 8

REVISION	DESCRIPTION OF CHANGE	CHK	APP'D

WRTEN
7400 M54
WRTEN*
7400 M54
2NDWRT
7402 M40
(BCTØ•DC3)* (SH4)
WRT (SH2)
7474 CTS•WRT FFI M53
IST WRT*
7420 M27
GO (SH6) (M61-12)
IST WRT
7400 M43
(ZB• IST WRT)* (SH6) (M62-9)
(CLR+TR)*(SH2)
(M30-5)(SHI)SDOA
(SH 5)BCTI•DC3
(SH5)CTS*
7474 CANCEL M53
(REF)
STB42
TI08*
7403 M23
F3(SH2)
RI 1K
+5V
TI01*
7403 M23
FØ (SH2)
DSR*+CANCEL (STB26-IXSH5)
(DSR*+ CANCEL)*
7402 M76
LB DET
7474 M41
(SHI)SDI
BCTØ•DC2•WRT(SH4)
PD/LB*
7420 M27
(SH2)CLR*
PD/LB
7400 M43
(SH2)CIO4*
STB26-8(SHI)
RD(SH6)
CD•READ
7400 M15
LOST CARRIER
7403 M6
R2 1K
+5V
(STB26-15)(SH5)CD*
CD
7404 M52
CARRIER DETECTED 69
(CTS)(CTS•WRT)
STB42-12 (SH5)CTS
7400 M16
(SH6)(CTS•WRT)*
CTS•WRTFF
7400 M16
LOST CTS
7403 M6
CTS•WRTFF*
7400 M16
WRT (SH2)
R3 47Ω
C5 500PF
DSE
7400 M15
DSE*
7400 M15
TI02
7403 M23
(SH2)FI
CPTO2N 34
T2*
7400 M38
CLR*(SH2)
7400 M54
CLROVRN
CLROVRN*
7400 M54
7476 OVERRUN M32
(SH5)RDYFF
(SH4)BCT8
F2(SH2)
7403 M23
TI04
75 76 +14V
81 82 CRI -14V
1 2 +5V
C1 5MF 12V
C2 5MF 12V
C3 5MF 25V
C4 5MF 25V
85 86 GROUND
R/WACKA * (SH6)
+5V
7474 TIOACK M70
TIO•T9 (SH2)
ACKA
7403 M6
R4 1K
ACK
7403 M6
27 ACK
55 BOOT*
PAR IN STROBE (MI7-1)(SH6)
R9 1K
+5V

STB42 JUMPER OPTIONS

FROM	TO	DESCRIPTION
15	14	MUX PRIORITY DATA
15	—	LINE BREAK(NON-MUX)
11	10	TIO8=LINE BREAK DETECT
11	4	TIO8=CANCEL SYNC MODEM
11	14	TIO8=CANCEL ASYNC MODEM

APPLICABLE TO P.C. BOARD ARTWORK 001-04-03-707 REV. B OR GREATER

ITEM NO	PART ASSY NO	DESCRIPTION

INCOTERM CORPORATION

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

ASYNCHRONOUS CONTROLLER LOGIC DIAGRAM 007

DRAWN R. BULMER
CHECKED
ENGINEER
APPROVED
FIRST USED ON 001-04-02-707

D 001-04-01-007 DI

SCALE X SHT 3 OF 8

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

DV1 7476 M37 · DV2 7493 M55 · DV3 7493 M56 · DV4 7493 M57 · + 5V · TRT4 7404 M2C · CLRDV * 7404 M46 · CLRDV 7410 M39 · STRCK 7402 M40 · TRT4 * 7404 M20 · TURT 4 (37) · 1ST READ * (CTS•WRT) * (SH6) · RD * (SH6) · I ZERO * (SH6) · 7410 M33

STB 65, 66 BAUD RATE

DCD1 7430 M64 · DCD1 * 7404 M46 · DCK0 7476 M37 · DCK1 * 7403 M28 · DCK2 * 7403 M28 · WRT (SH2) · WRT * (SH2) · STB66 · STB42 · CTS * (SH5) M8-10 · STC * (SH5) M8-11 · SRC * (SH5) M9-13

BCTØ (SH5) M58-1 · I ZERO * (SH6) M36-5 · PAR OUT STROBE * (SH6) M24-4 · RD (SH6) M60-6 · PARGEN (SH1) M22-1 · WRT (SH2) · (BCTØ•DC2•WRT) * 7410 M39 · BCTØ•DC2•WRT 7404 M52 · LBDET (SH3) M41-11 · TB69-9 · TB69-6 · TB69-14 · SR1 (SH1) M14-8 & 9 · SR2 (SH1) M5-8 & 9 · BTCA (SH5) M50-1 · DC1 7404 M31 · DATA I (SH1) M32-6 · PARITY I (SH1) M22-6 · DC2 7402 M40 · DC1 * 7440 M49 · DC3 7404 M46 · DC3 * 7400 M38 · SDOB (SH1) M41-3

(BCTØ•DC3) * 7400 M38 · PARGEN (SH1) M22-3 · PARINI (SH1) M22-8 · TR (SH2) M51-11 · 2ND WRT (SH3) M40-2 · BCTØ DEL (SH5) M47-11

DCK 7404 M46 · DCA 7474 M47 · DCB 7474 M48 · DC3 7474 M48 · R6 1K · +5V · TB69-7

STB 42 JUMPER OPTIONS

13	TO 14	SYNC MODEM WITH MUX
13	TO 3	ASYNC MODEM W/O MUX
8	TO 7	ASYNC MODEM
8	TO 5	SYNC MODEM

STB 66 JUMPER OPTIONS

15	TO 14	INTERNAL CLOCK
15	TO 8	EXTERNAL CLOCK

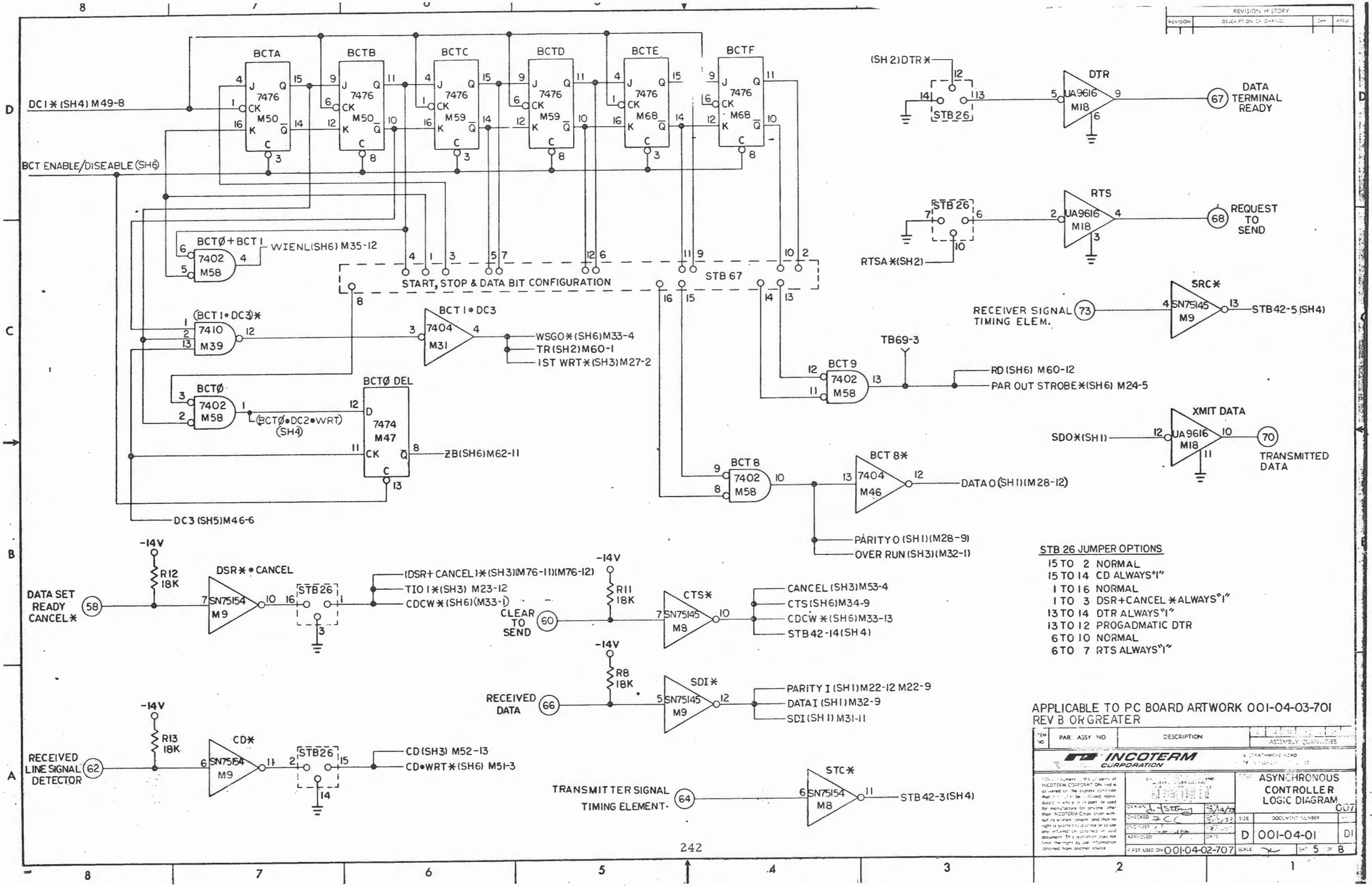
APPLICABLE TO P.C. BOARD ARTWORK 001-04-03-701 REV. B OR GREATER

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION, 5 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source"

DRAWN J. Ashkenazy	DATE 9-15-78	TITLE	ASYNCHRONOUS CONTROLLER LOGIC DIAGRAM 007
CHECKED	DATE	SIZE	DOCUMENT NUMBER / REV
ENGINEER	DATE	D	001-04-01 / DI
APPROVED	DATE		
FIRST USED ON 001-04-02-707		SCALE	SHT 4 OF 8



STB 26 JUMPER OPTIONS

15 TO 2 NORMAL
15 TO 14 CD ALWAYS "1"
1 TO 16 NORMAL
1 TO 3 DSR+CANCEL * ALWAYS "1"
13 TO 14 DTR ALWAYS "1"
13 TO 12 PROGADMATIC DTR
6 TO 10 NORMAL
6 TO 7 RTS ALWAYS "1"

APPLICABLE TO PC BOARD ARTWORK 001-04-03-701
REV B OR GREATER

ITEM NO	PAR. ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 5 STRATHMORE ROAD

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it will not be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN J. [illegible] 5/14/73
CHECKED 7 CC 5/15/73
ENGINEER [illegible] DATE
APPROVED [illegible] DATE
FIRST USED ON 001-04-02-707

ASYNCHRONOUS CONTROLLER LOGIC DIAGRAM

SIZE	DOCUMENT NUMBER	REV
D	001-04-01	D1

SCALE — SHT 5 OF 8

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	DATE	APPD

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

STB-26 JUMPER OPTIONS

5 TO 11	ASYNC MODEM
5 TO 4	SYNC MODEM

STB-42 JUMPER OPTIONS

2 TO 16	MUX
2 TO –	NONMUX
12 TO 6	ASYNC MODEM NONMUX
12 TO 6	SYNC MODEM NONMUX
12 TO 6	ASYNC MODEM WITH MUX
12 TO –	SYNC MODEM WITH MUX

APPLICABLE TO P.C BOARD ARTWORK
001-04-03-707 REV. B OR GREATER

ITEM NO	PART ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture, for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN	R. BULMER	DATE 2/7/73
CHECKED		DATE 3/6/73
ENGINEER		DATE 3-23-73
APPROVED		DATE
FIRST USED ON 001-04-02-707		

ASYNCHRONOUS CONTROLLER LOGIC DIAGRAM 007

SIZE D | DOCUMENT NUMBER 001-04-01 | REV D1 | SCALE – | SHT 6 OF 8

SEE SHEET5

TRANSMITTER SIG. TIMING ELEMENT (64) — STC* — CMI160 M8 — C9 270PF — STB42-3(SH4)

-14V — R13 15K — RECEIVED LINE SIG. DETECTOR (62) — CD* — CMI160 M8 — C8 270PF — STB-26

-14V — R12 15K — DATA SET READY CANCEL* (58) — DSR*CANCEL — CMI160 M7 — C6 270PF — STB-26

-14V — R11 15K — CLEAR TO SEND (60) — CTS* — CMI160 M7 — C7 270PF — CANCEL(SH3)(M52-4); CTS(SH3)(M34-9); CDCW*(SH6)(M33-13); STB42-14(SH3)

-14V — R8 15K — REC'D DATA (66) — SDI* — CMI160 M9 — C10 270PF — PARITY(SHI)(M22-12); DATA I(SHI)(M32-9); SDI(SHI)(M31-11)

RECEIVER SIG. TIMING ELEMENT (73) — SRC* — CMI160 M9 — C11 270PF — STB42-5(SH4)

DTR — STB-26 — CMI150 M75 — (67) DATA TERMINAL READY

XMIT DATA — SDO*(SHI) — CMI150 M18 — (70) TRANSMITTED DATA

RTS — STB-26 — CMI150 M18 — (68) REQUEST TO SEND

SEE SHEET 3

(75)(76) +14V
(81)(82) -14V
(1)(2) +5V
(95)(86) GROUND
+ C1 5MF 12V
+ C2 5MF 12V
C3 + 5MF 25V
+ C4 5MF 25V

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APVD

APPLICABLE TO P.C.BOARD ARTWORK 001-04-03-707 REV.A ONLY

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706

INCOTERM CORPORATION — 5 STRAT MORE ROAD HATFIELD, MASSACHUSETTS 01038

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN R BULMER — DATE 6/26/72
CHECKED — DATE 6/30/72
ENGINEER — DATE 6-30-72
APPROVED — DATE

ASYNCHRONOUS CONTROLLER LOGIC DIAG 007

SIZE D | DOCUMENT NUMBER 001-04-01-007 | REV D1

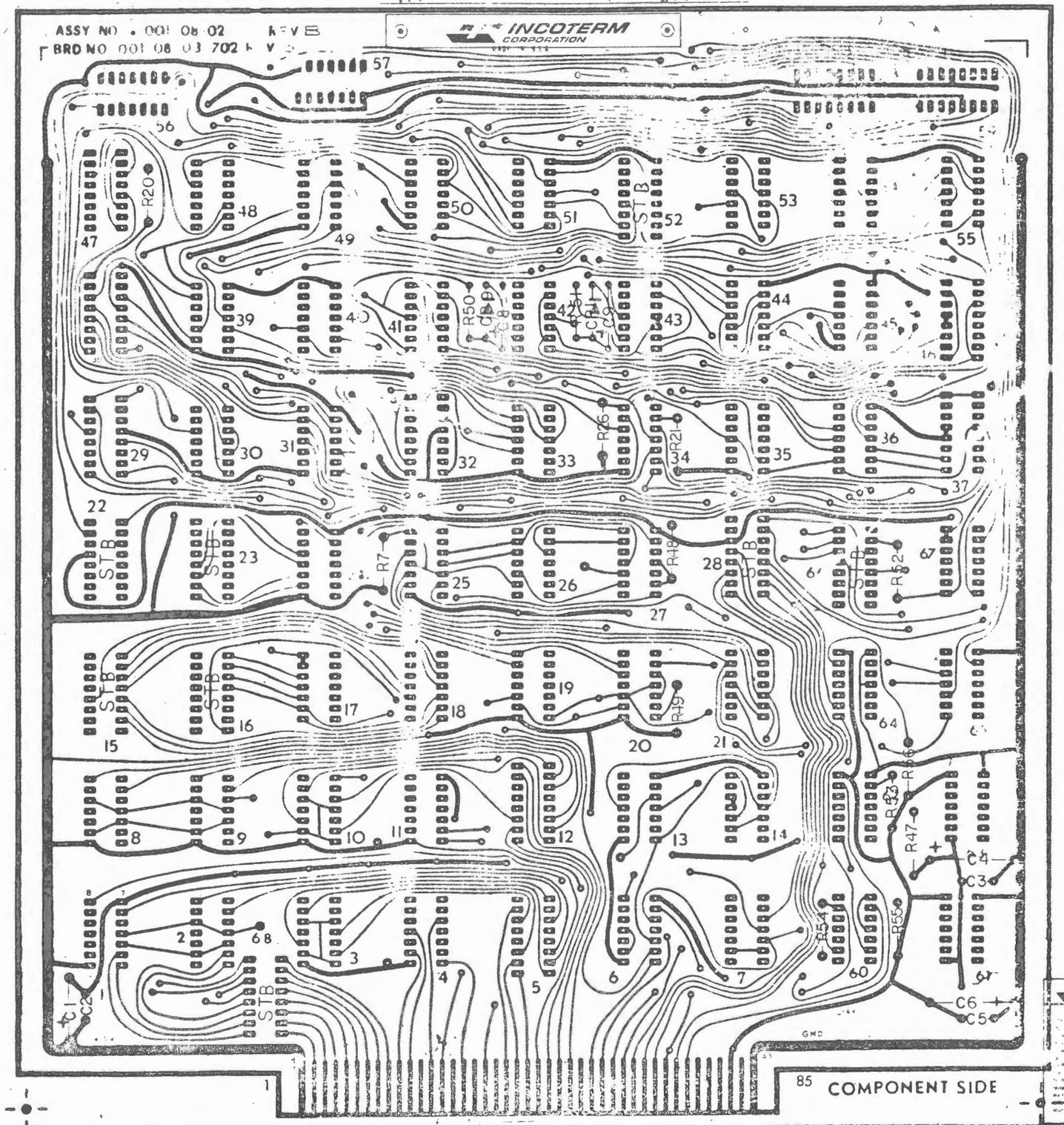
FIRST USED ON 001-04-02-707 | SCALE ~ | SHT 7 OF 8

REV	DESCRIPTION	DR	CHK
B	RELEASED		
C	ECO 1438 5-4-71 RAF		
D	REVISED/ECO 1469 8/26/71		
E	REV CHANGE ONLY/ECO 2025		
E1	ECO 2125 CHANGES THIS DOCUMENT STRUCTURE PER PROCEDURE 300-002. SEE SHEET 1 FOR CONTINUING REVISION ASSIGNMENT HISTORY		

ASSY NO. 001-08-02 REV B

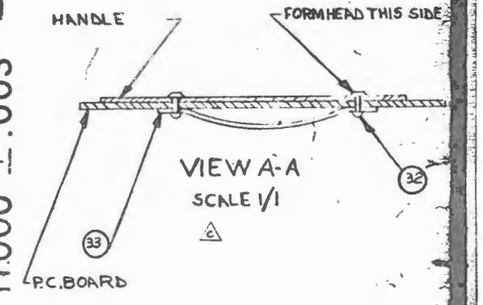
BRD NO 001-08-03-702 REV B

INCOTERM CORPORATION



ITEM	REFERENCE DESIGNATION
57	C8
56	R51
55	C9
54	R50
53	M61, 63
52	M60, 62, 64
51	M42, 43
50	R53, 54, 55, 56
49	STB15, 16, 22, 23, 28, 52, 66, 68
48	C4, C6
47	C2, C3, C5
46	C1
45	R47
44	R7, 20, 21, 26, 48, 49, 52
43	CR1, CR9
42	M17, 24, 67
41	M51
40	M29, 32, 37, 38, 46, 47, 58, 59
39	M5, 12
38	M1, 2, 7, 8, 9, 50
37	M18
36	M26, 35, 39, 65
35	M4, 6, 11, 31, 40, 45
34	M3, 10, 25, 34
33	M13, 19, 30, 36, 41, 53, 57
32	M14, 20, 21, 27, 33, 44, 48, 49, 54, 55, 56

11.000 ± .003



ASSEMBLE WITH ARTWORK 001-08-03-702 REV B

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

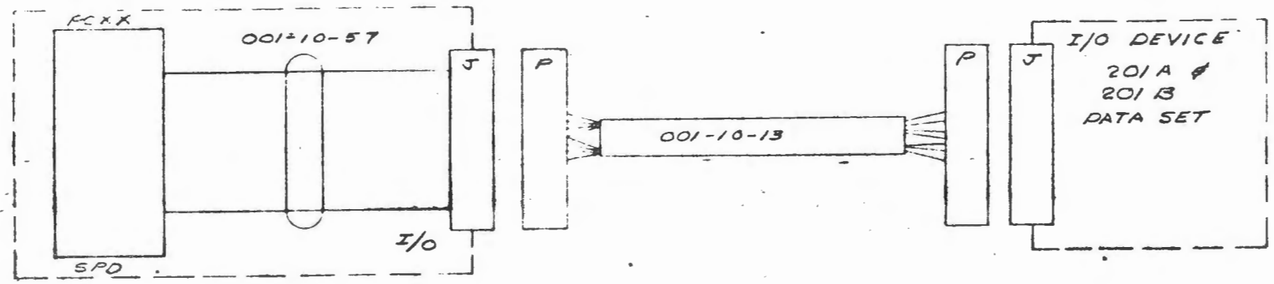
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

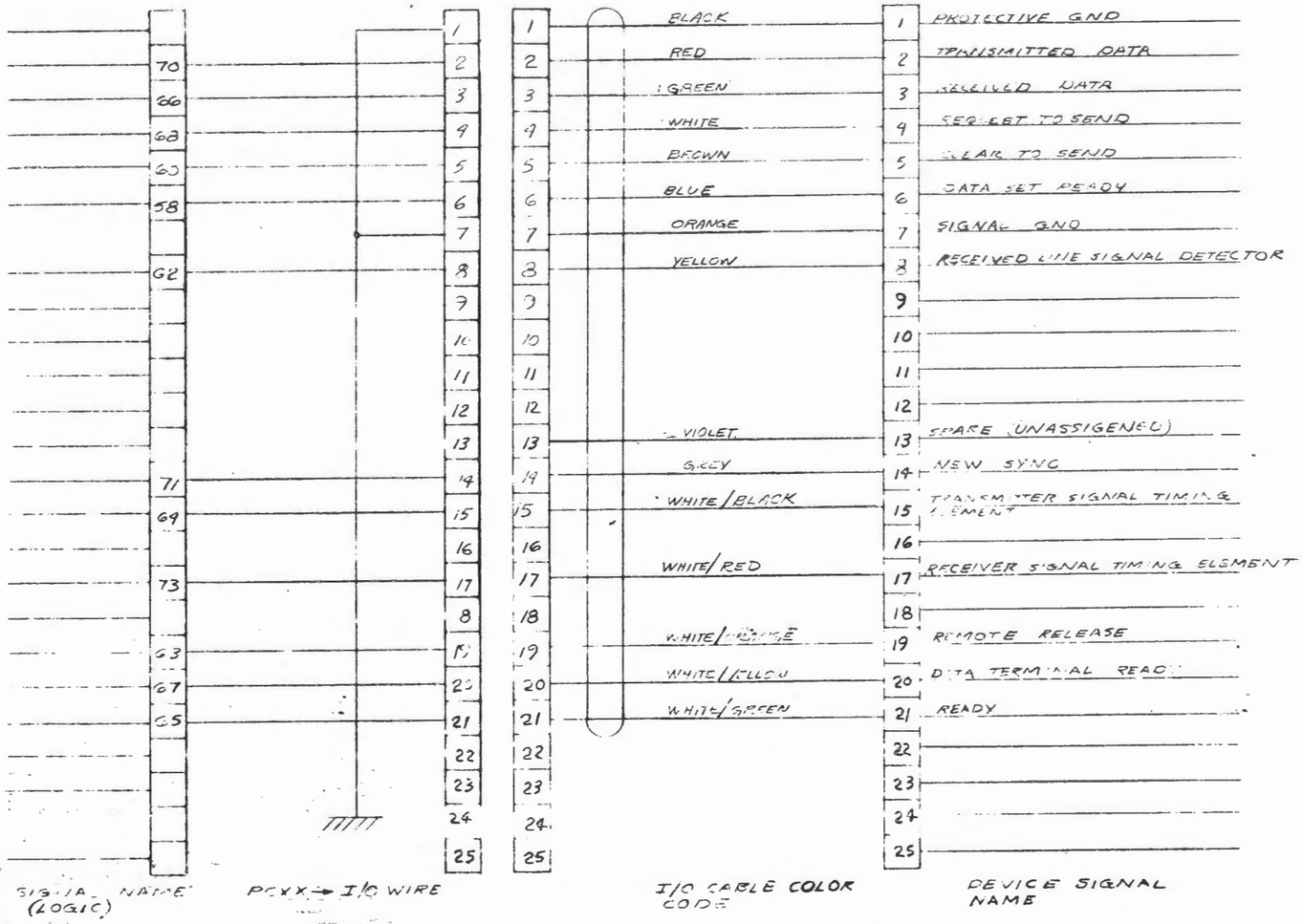
DR [illegible] DATE 5-5-71
CHK [illegible]
ENG [illegible] 5-5-71
APPD [illegible]
NEXT ASSY 001-08-05-701

TITLE
P.C. BOARD ASSY
SYNCHRONOUS
MODEM CNTRL-701

SIZE	P.C.	E.S.	NO.	REV
D	001-08-02			E

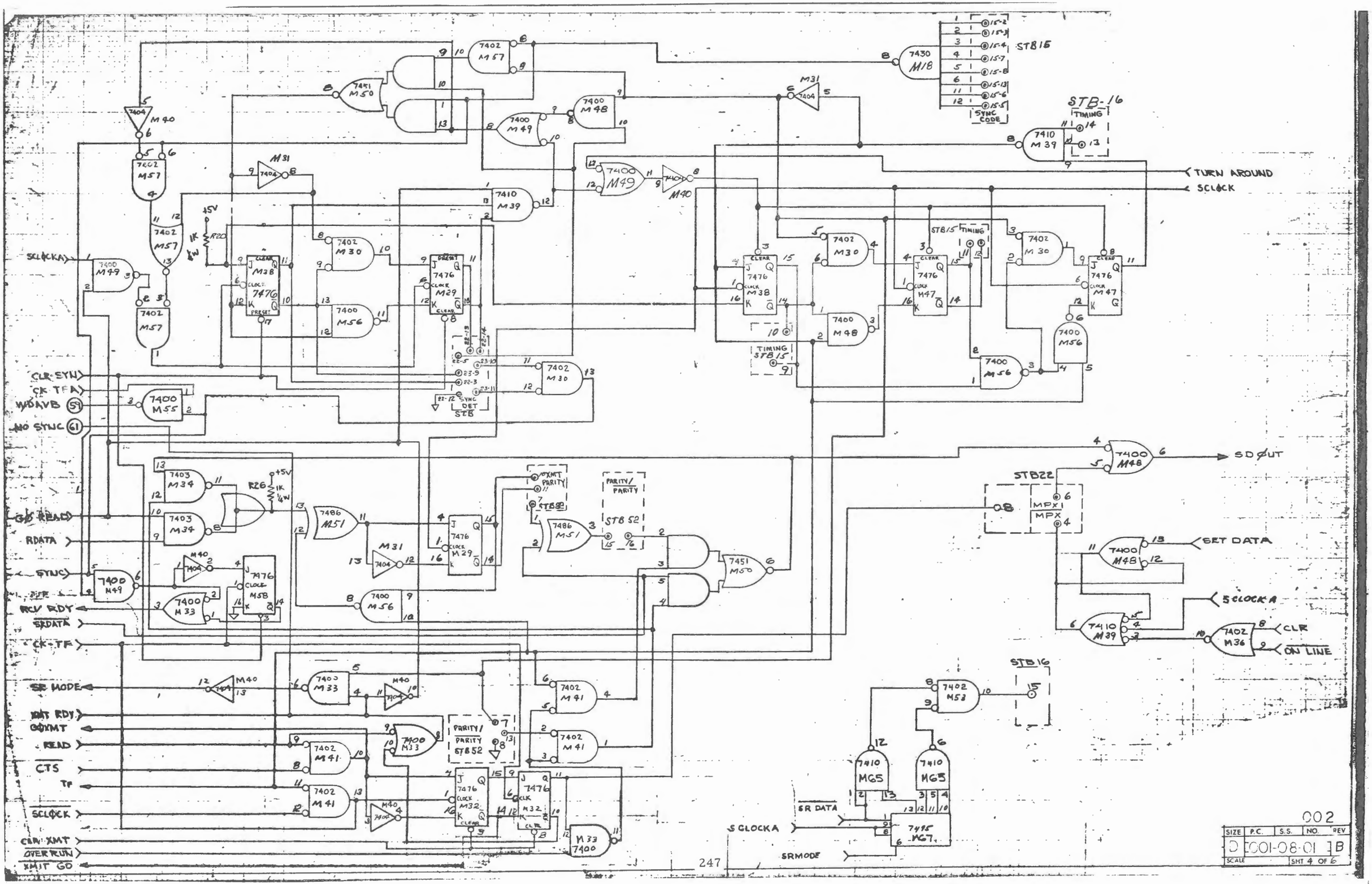
SCALE 2/1 SHT 3 OF 3





SYNCHRONOUS CONTROLLER 002

D 001-08-01 B


TURN AROUND
SCLOCK
STB15
STB16
STB22
SYNC CODE
SD OUT
SET DATA
SCLOCKA
CLR
ON LINE
SR DATA
SRMODE
SCLOCKA
CLR SYN
CK TFA
WDAVB
NO SYNC
GO READ
RDATA
SYNC
RCV RDY
SRDATA
CK TF
SR MODE
XMIT RDY
GO XMT
READ
CTS
TF
SCLOCK
CLR XMT
OVERRUN
XMIT GO
SYNC DET STB
XMT PARITY STB
PARITY/PARITY STB 52
SIZE
P.C.
S.S.
NO.
REV
D
001-08-01
1B
SCALE
SHT 4 OF 6
002
247

RECEIVED DATA
66
R53 1/4W 18K
-14V
M62 RECEIVER CM1160
CM1160
M45 74H04
STBGG
R DATA
-14V 81 82 -14V
+14V 76 75 +14V
+5V 1 2 +5V
C1 4.7µF C2 .01µF
C4 6.8µF C3 .01µF
C6 6.8µF C5 .01µF
RETURN 86 85 GND

RECEIVED LINE SIGNAL DETECTOR
62
R54 18K 1/4W -14V
M60 RECEIVER CM1160
CARRIER

DATA SET READY
58
R55 18K 1/4W -14V
M60 RECEIVER CM1160
ON LINE

CLEAR TO SEND
60
R56 18K 1/4W -14V
M64 M22 RECEIVER CM1160
CTS

STBGG

TRANSMITTER SIGNAL TIMING ELEMENT
64
M64 RECEIVER CM1160

RECEIVER SIGNAL TIMING ELEMENT
73
M62 RECEIVER CM1160
7402 M36
CK TFA
TF

GØ READ
T9-13
7476 CLOCK M37 CLEAR PRESET
7403 M34
7403 M34
+5V R21 1K 1/4W
7402 M36
XMT RDY

SET DATAR
CARRIER OUT
STBGG
+5V R50 430Ω 1/4W
CR9 IN4148
CB 6.8µF
9601 M42
R52 +5V 1K 1/4W
SET RTS
R51 +5V 2K 1/4W
4.7µF C9
CR10 IN4148
9601 M43
7404 M37
SCLØCK
SCLØCKA
SCLØCK

STB52
ØV
7402 M36
7410 M35
STB28
SDOUT
STBGG
7404 M45
SDOUT
6 7 RTSON STB28

CM1150 DRIVER M63 +14V -14V
NSYN/ NSYN STB28
NEW SYNC
+14
R47 3.3K 1/2W
DATA TERMINAL READY
REMOTE RELEASE
READY
DSR STB28
CM1150 DRIVER M61 +14V -14V
TRANSMITTED DATA
CM1150 DRIVER M61 +14V -14V
REQUEST TO SEND

002
SIZE D | P.C. 600-0901 | REV B
SCALE | SHT 2 OF 2

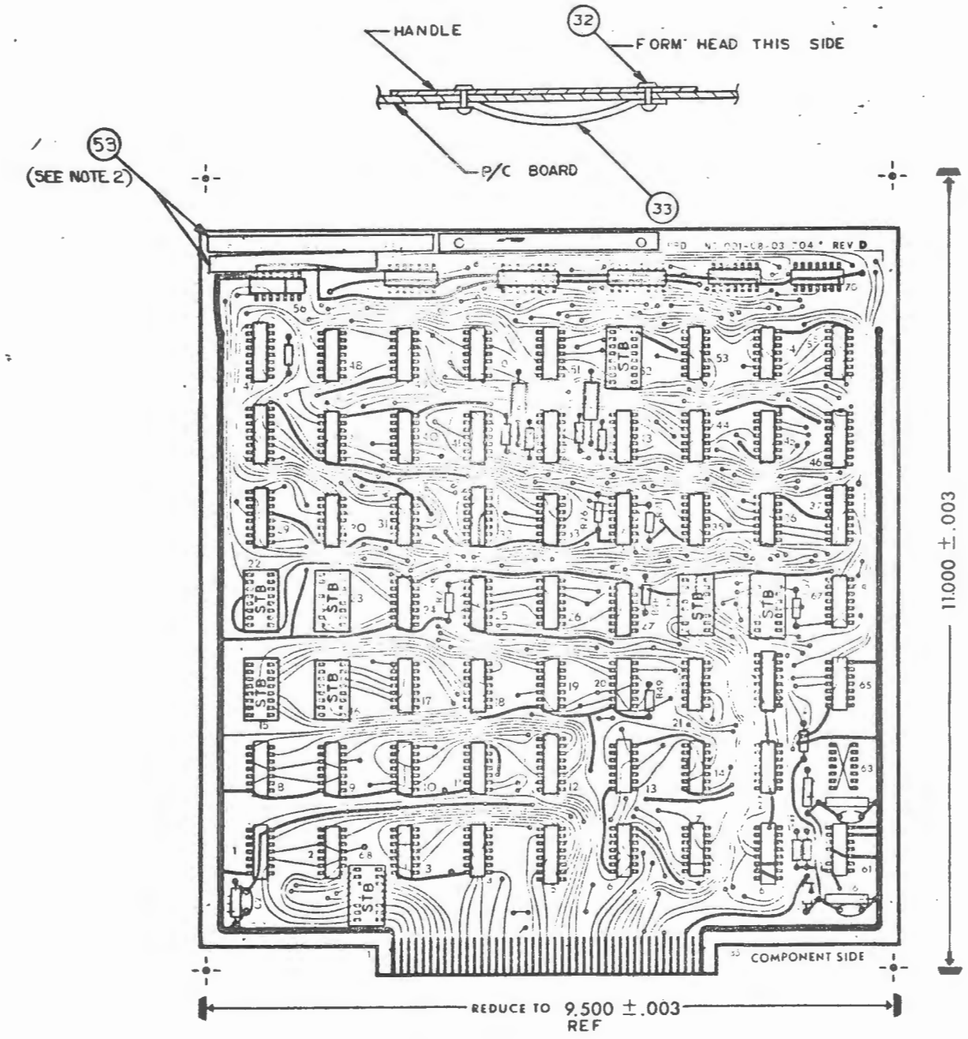
TYP00 (29)
TYP01 (21)
FUNC03 (26)
FUNC02 (24)
FUNC01 (22)
FUNC00 (20)
FIND SYNC (57)
ADDXX (28)
CONTROLLER BOOT (25)
RESET (23)
SEL-OREG
ACK (27)
SEL-SR
SEL-CPU
STRBA
STRBB
CK-TFA
CPT 18N (35)
CPT 9.N (36)
SET DATAR
SET DATA
READ
CLR
TURN AROUND
CLR-SYN
CLR XMT
VMT&O
STB 2B
ONLINE
MPX/MPX
CTS
INTSELIN (31)
INTSELOUT (32)
OVERRUN
CK-TP
INT.X (30)
GØ XMT
SYNC
+5v (39)
R7 1K 1/4W
T9-13
GO READ
ØV
XMT RDY
CARRIER
RCV RDY
CARRIER ØUT (69)

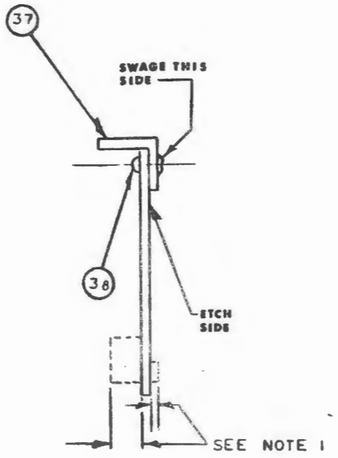
SIZE	P.C.	S.S.	NO.	REV
	001-08-01			B
SCALE		SHT 3 OF 6		

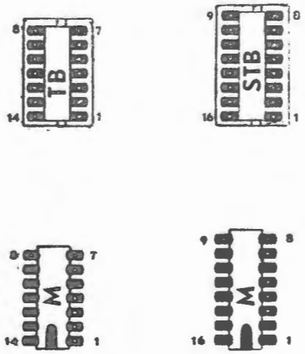
ΦTB00
ΦTB01
ΦTB02
ΦTB03
ΦTB04
ΦTB05
ΦTB06
ΦTB07
SEL+ CPU
SEL- SRI
STB68
STRBA
STRBB
ΦREG
7451
M8
M9
M2
M1
STB15-1
STB15-16
STB16-16
STB16-3
STB16-2
STB16-4
STB15-15
STB15-14
M12
M5
P/O 7475
B07
B06
B05
B04
B03
B02
B01
B00
WORD LENGTH
STB 22-8
STB 22-15
STB 23-7
STB 23-1
STB 23-6
STB 23-8
STB 22-16
STB 22-1
STB 23-13
STB 23-14
STB 23-15
STB 23-16
STB 23-2
STB 23-3
STB 23-4
STB 23-5
SYNC CODE
STB16
7404
M11
STB16-9
STB16-10
STB16-11
STB16-12
SYNC CODE
SR DATA
RDATA
SR MODE
7495
M17
M24
SCLOCKA
7403
M10
M3
INB07
INB06
INB05
INB04
INB03
INB02
INB01
INB00

SIZE	P.C.	S.S.	NO.	REV
D	[illegible]			B
SCALE		SHT 5 OF 5		

CC2







PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
58	
57	C8
56	RS1
55	C9
54	
53	
52	RS0
51	~~M61~~
50	~~M60, 64~~
49	M42, 43
48	
47	
46	RE4 55 56
45	
44	
43	
42	
41	
40	
39	
38	
37	
36	
35	
34	
33	
32	STB15,16,22,23,28,52,66,68
31	
30	
29	C4, 6
28	
27	C2, 3, 5
26	C1
25	R47
24	
23	
22	
21	
20	
19	R7, 20, 21, 26, 48, 49, 52
18	
17	CR10, 11, 9
16	
15	M61
14	M60,64
13	~~M60~~
12	M62, 70
11	M17, 24, 67
10	M51
9	M29, 32, 37, 38, 46, 47, 58, 59
8	M5, 12
7	M1, 2, 7, 8, 9, 50
6	M18
5	M26, 35, 39, 65
4	M4, 6, 11, 31, 40, 45
3	M3, 10, 25, 34
2	M13, 19, 30, 36, 41, 53, 57
1	M14, 20, 21, 27, 33, 44, 48, 49, 54, 55, 56, 69

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 53, AND MARK ASSY. NO. 001-08-02-704D AND LATEST ASSY. REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 001-08-03-704 REV D

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (2PLCS) .02 (1PLCS)
ANGLES 2

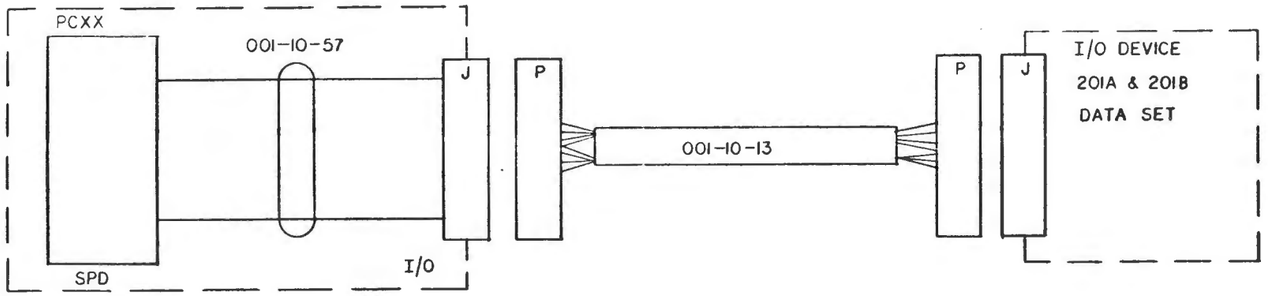
DR [illegible] DATE 1/15/80
CHK [illegible] DATE 1/15/80
ENG
APPD
NEXT ASSY 0-10-00

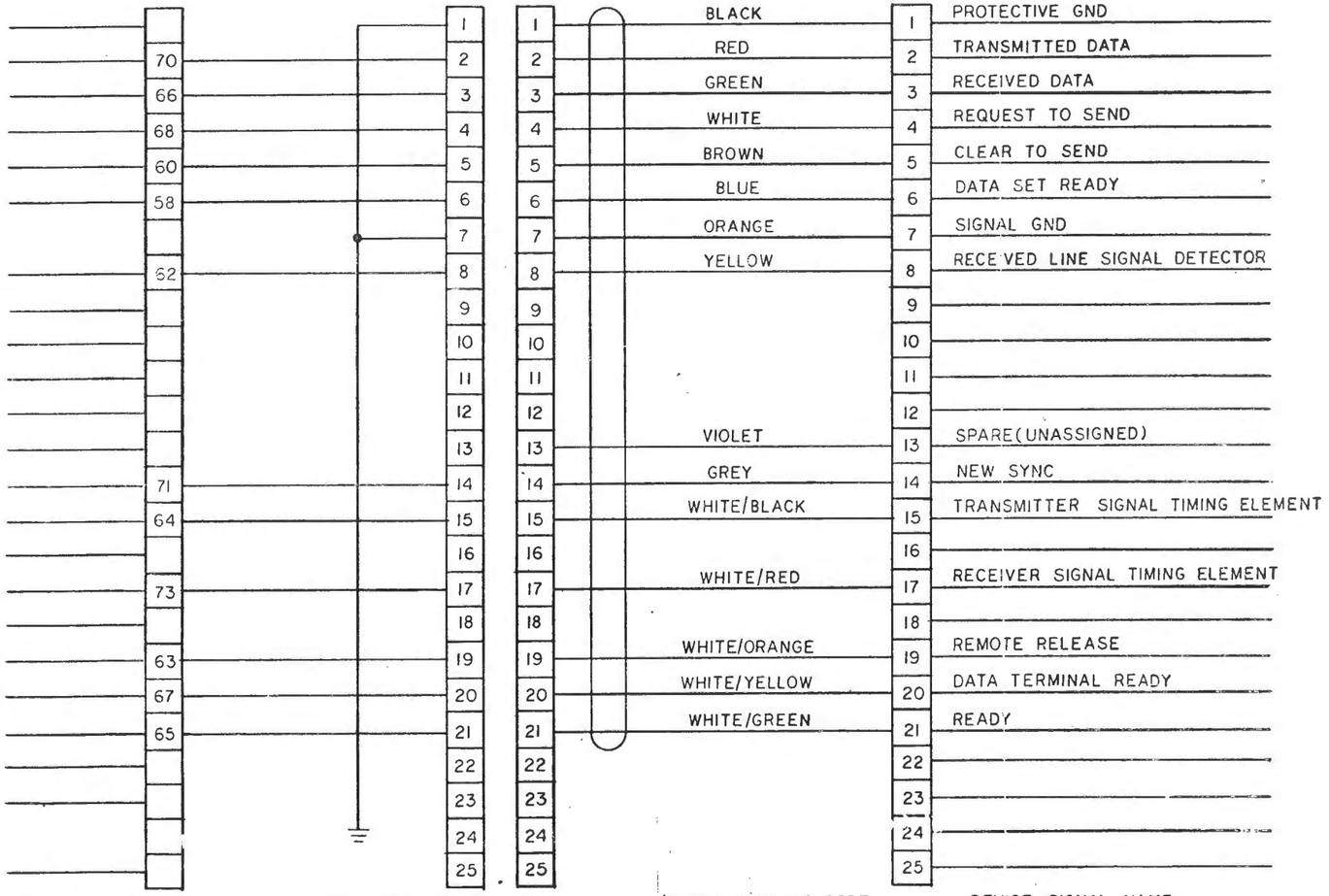
TITLE
P.C. BOARD ASSY
SYNCHRONOUS
CONTROLLER 704D

SIZE	P C	S S.	NO.	REV
D	001-08-02			C3

SCALE 1:1 SHT 4 OF 4

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD





ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
FRACTIONS ± 1/64
.X ± .1
.XX ± .03
.XXX ± .010
ANGLES ± 1°

DRAWN Tim Schibler	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

TITLE
LOGIC DIAGRAM
SYNCHRONOUS
CONTROLLER 004

SIZE	DOCUMENT NUMBER	REV
D	001-08-01	D1

SCALE — SHT 8 OF 8

REVISION	DESCRIPTION OF CHANGE	CHK	APPD
D1	REDRAWN/ECO 3000	✓	✓

REC DATA * RECEIVER
RECEIVED DATA (66)
+5V
M60 75154
M45 7404
RD PAR(SH 4)M34-9
SREG 1(SH 6)MI7-1
STB866

XMT DATA *
SDOUT(SH 4)
M45 7404
STB66
+14V
-VEE
M61 UA9616
DRIVER *
(70) TRANSMITTED DATA

-14V
R54 18K
CAR DET * RECEIVER
RECEIVED LINE SIGNAL DETECTOR (62)
M60 75154
DS ERROR(SH 2)M7-3
CAR OUT(SH 2)M6-5
N RDMODE(SH 2)MI4-2
STB28-2(SH 2)
STB28

XMT RDY(SH 4)
RECEIVER *
TRANSMITTER SIGNAL TIMING ELEMENT (64)
STB66
M64 75154
M62 7474
XMTCK
SCLOCK *
M34 7403
R21 1K
SCLOCK
M31 7404
BT2°(SH 5)M38-1
BT2¹(SH 5)M47-1
BT2²(SH 5)M47-6
PARITYEF(SH 4)M29 1
RTS *
M35 7410
RTSON
M61 UA9616
DRIVER *
(68) REQUEST TO SEND

CTS * RECEIVER
CLEAR TO SEND (60)
RTS CTS(SH 4) M41-8
STB28-3(SH 2)
R56 18K
-14V
SCLOCK *
SCLOCKA
M31 7404
SREG 2(SH 6)M24-9
SREG 1(SH 6)MI7-9
SREG 3(SH 5)M67-9
SYM TM REC(SH 5)M49-1
PRI DATA*(SH 4)M39-4
LSKBTCK(SH 4)M41-12
OVERRUN(SH 2)

+14V R47 3.3K 1/2W
DSR
(67) DATA TERMINAL READY
(63) REMOTE RELEASE
(65) READY
STB28

¢9 13(SH 3)
M37 7476 RCDIF1
M37 7476 RCDIF2
M36 7402
STB52

CAR OUT(SH 2)
SET DATA R(SH 3)
STB66
R50 430 +5V
C8 6.8 75V 5%
CR9
M42 9601 NSYNCP
GO READ(SH 4)

RECEIVER * RECEIVER SIGNAL TIMING ELEMENT (73)
M64 75154
RCKLSTBT
M36 7402
WD LNGTH (SH 5)
SYNCCK(SH 4)M55-1
PAR REG STRB(SH 2)M7-1
R55 18K
DSR * RECEIVER
DATA SET READY (58)
M60 75154
PDRST(SH 4)M36-9
TI08(SH 2)M25-2

+14V
-VEE
M61 UA9616
DRIVER *
STB28
NSYN/ NSYN
(71) NEW SYNC

R51 3K +5V
C9 4.7 100V 5%
CR10
SET RTS*(SH 3)
R52 1K +5V
M43 960i RTS DLY

CR11
-14V (81)(82) -VEE
+14V (76)(75)
+5V (1)(2)
RETURN (86)(85) GND
C1 4.7 20% 10V
C2 .01
C4 6.8 35V 20%
C3 .01
C6 6.8 35V 20%
C5 .01

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTORS ARE IN OHMS, 1/4W, ±5%.
   B. ALL CAPACITORS ARE IN MICROFARADS.
   C. ALL DIODES ARE TYPE IN4148.
2. THE FOLLOWING I/O PINS ARE PREASSIGNED AND MUST BE USED FOR FUNCTION DESCRIBED ONLY:
   A. +5V — PINS 1 & 2
   B. GND — PINS 85 & 86
   C. +12V — PINS 75 & 76
   D. -13V — PINS 81 & 82
   E. I/O BUSS — PINS 3 THRU 37.

HIGHEST REF DES USED					
R56	C9	CRII	M70		
REF DES NOT USED					
RI–R6	R53	C7	CRI–CR8		
R8–R19	MI5	MI6	M22	M23	
R22–R25	M28	M42	M43	M52	
R27–R46	M63	M66	M68		

ITEM NO	PART/ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED: Dimensions are in inches and tolerances are: Fractions ±1/64, .X ±.1, .XX ±.02, .XXX ±.005, Angles ±1°

DRAWN Tom Sullivan DATE
CHECKED DATE
ENG'R'G'R P. Mc Cann DATE 7-25-74
APPROVED DATE
FIRST USED ON

TITLE: LOGIC DIAGRAM SYNCHRONOUS CONTROLLER 004

SIZE D | DOCUMENT NUMBER 001-08-01 | REV D1

SCALE | SHT 1 OF 8

253

8 7 6 5 4 3 2 1

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

INTSELIN (31) — M4 7404 — INTSELOUT (32)

CAR DET*(SH 1) 2
CTS*(SH 1) 3
DS ERROR(SH 2) 14
STB28
MPX/MPX
WRTA*(SH 4)
WRTF/F(SH 3)
CAN* — M35 7410

UNMSKFF(SH 3) — UNMSK — M54 7400 — M69 7400 — M54 7400 — M54 7400 — M55 7400 — M55 7400 — M55 7400 — M11 7404 — INTX (30)

(R&W)ADX (SH 3) — M44 7400 — (R&W)INT — INTRST* — M27 7400 — M26 7400

LSTBTCK(SH 4)
RCV RDY(SH 4)
RTS CTS(SH 4)
M51 7486 — RDY
M46 7476 — RDYFF
M46 7476 — OVRNFF
M58 7476

CLR(SH 3)
ØADDXX(SH 3)
INTRST — MI3 7402
CLRINT — M53 7402

M45 7404 — M70 7474 — ACKFF — M27 7400 — ACK — M25 7403 — ACK (27)

CPT02N (34)
ADDXX(SH 3)
+5V — R7 1K

TYP01 (21) — M4 7404 — MI1 7404 — TI* — M26 7410
CIO* — M20 7400
TYP00 (19) — M4 7404 — MI1 7404 — MI9 7402
CIO ADDXX(SH 3) MI3-3
RD REG ENB — M26 7410
WRT REG ENB — M31 7404
Ø9-13(SH 3)
XMIT ENB(SH 4) M33-13
(R&W)ADX (SH 3)MI3-8

OUT 0(SH6)MI-4
OUT 1(SH6)MI-10
OUT2(SH6)M2-4
OUT 3(SH6)M2-10
OUT4(SH6)M9-4
OUT5(SH6)M9-10
OUT6(SH6)M8-10
OUT7(SH6)M8-4
OUT0(SH6)MI-3
OUTI(SH6)MI-13
OUT2(SH6)M2-3
OUT3(SH6)M2-13
OUT4(SH6)M9-3
OUT5(SH6)M9-13
OUT6(SH6)M8-13
OUT7(SH6)M8-3

M7 7451 — PAR REG STRB — DS ERROR
RCKLSTBT(SH 1)
GO READ(SH 4)
XMTRDY (SH 4)
STB28-14 (SH 2)

REG STRB A — M6 7404 — PRA(SH 6)M5-4
REG STRB B — M6 7404 — PRB(SH 6)MI2-13

F2(SH 3) — TI02* — M25 7403 — M21 7400

OVERRUN — M21 7400
STB52-5 (SH 1)
TI04* — M25 7403
F4(SH 3)
TI08* — M25 7403
F8(SH 3)
CLR SYN*(SH 3)
OVERRUN*

RD ERROR — MI4 7400

SYNC(SH 5)
CAR DET*(SH 1)
IN RDMODE — MI4 7400

CAR OUT — M6 7404 — STB66-12(SH 1) — CARRIER OUT (69)

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to practice or to use any information contained in this document. This restriction does not limit the right to use information obtained from another source."

DRAWN Tom Wikberg — DATE
CHECKED — DATE
ENGINEER — DATE
APPROVED — DATE
FIRST USED ON

TITLE: LOGIC DIAGRAM SYNCHRONOUS CONTROLLER 004

SIZE	DOCUMENT NUMBER	REV
D	001-08-01	D1

SCALE — SHT 2 OF 8

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

FUNCO3 (26) — F8 M4 7404 — 3 — 4
FUNCO2 (24) — F4 M11 7404 — 3 — 4
FUNCOC (20) — M6 7404 — 3 — 4
FUNCOI (22) — F2 M11 7404 — 5 — 6
CPTI8N (35)
CPT9N (36)
FIND SYNC (57)
RESET (25)
CONTROLLER BOOT (55)
ADDXX (28)

M13 7402 — 12, 11 — 13
M59 7476 (UNMSKFF) — J 9, CK 6, K 12, C 8, Q 11 — UNMSK(SH 2)M54-1
M4 7404 — 9 — 8
M51 7486 — 5, 4 — 6 — TIO4*(SH 2)M25-9
TIO2*(SH 2)M25-12
M14 7400 — 5, 4 — 6
CIC*(SH 2) 3 — CIOADDXX — M13 7402 — 2 — 1
ØADDXX* — M20 7400 — 13, 12 — 11 — INTRST(SH 2)MI3-6
SET DATA R* — M21 7400 — 10, 9 — 8 — STB66-11(SH 1)
M20 7400 — 4, 5 — 6
M19 7402 — Ø9-13 — 2, 3 — 1
M19 7402 — 6, 5 — 4 — Ø9-13*
XMTCK(SH 1)M62-3
RCDIFI(SH 1)M37-6
RCDIF2(SH 1)M37-1
ACKFF(SH 2)M70-3
SCLOCK*(SH 1)M34-1
PAR REG STRB(SH 2) M7-9
R49 IK — +5V
IOR — M20 7400 — 1, 2 — 3
R48 IK — +5V
M4 7404 — 5 — 6
M27 7400 — 1, 2 — 3
M6 7404 — 1 — 2
ADDXX — M19 7402 — 11, 12 — 13
M6 7404 — 9 — 8
TI*(SH 2) 8 — (R&W)ADX — M13 7402 — 9 — 10 — (R&W)INT(SH 2)M44-9 — INT RST*(SH 2)M27-10
SEL OREG — M27 7400 — 5, 4 — 6

M45 7404 — 3 — 4
M59 7476 (WRTF/F) — J 4, CK 1, K 16, C 3, Q 14 — 15
CAN(SH 2)M35-11
SET DATA* — M65 7410 — 9, 11, 10 — 8 — PRI DATA(SH 4)M48-13
RTS CTS(SH 4)M41-9
XMTRDY(SH 4)M33-9
TI08(SH 2)M25-1
M45 7404 — 1 — 2
WRT RESET — M53 7402 — 6, 5 — 4
WRTB(SH 4)M32-8
WRTA(SH 4)M32-3
M53 7402 — 2, 3 — 1
SET RTS* — M35 7410 — 4, 3, 5 — 6
RTS DLY(SH 1)M43-1
M44 7400 — 4, 5 — 6
M44 7400 — 12, 13 — 11 — BTCTRENB(SH 5)M49-13
TURNAROUND
CLR — M44 7400 — 2, 1 — 3
CLR SYN* — M45 7404 — 11 — 10
PDRST(SH 4) M36-8
CLRINT(SH 2) M53-11
OVRNFF(SH 2)M46-3
OVERRUN(SH 2)M21-13
RD ERROR(SH 2)MI4-9
SSRI(SH 5)M38-7
SSR2(SH 5)M29-8
RD RDY(SH 4)M58-3
ACK(SH 2)M25-4

INO(SH 6)M3-13
INI(SH 6)M3-10
IN2(SH 6)M3-1
IN3(SH 6)M3-5
IN4(SH 6)MI0-13
IN5(SH 6)MI0-10
IN6(SH 6)MI0-4
IN7(SH 6)MI0-1

ITEM NO	PART ASSY. NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION — 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

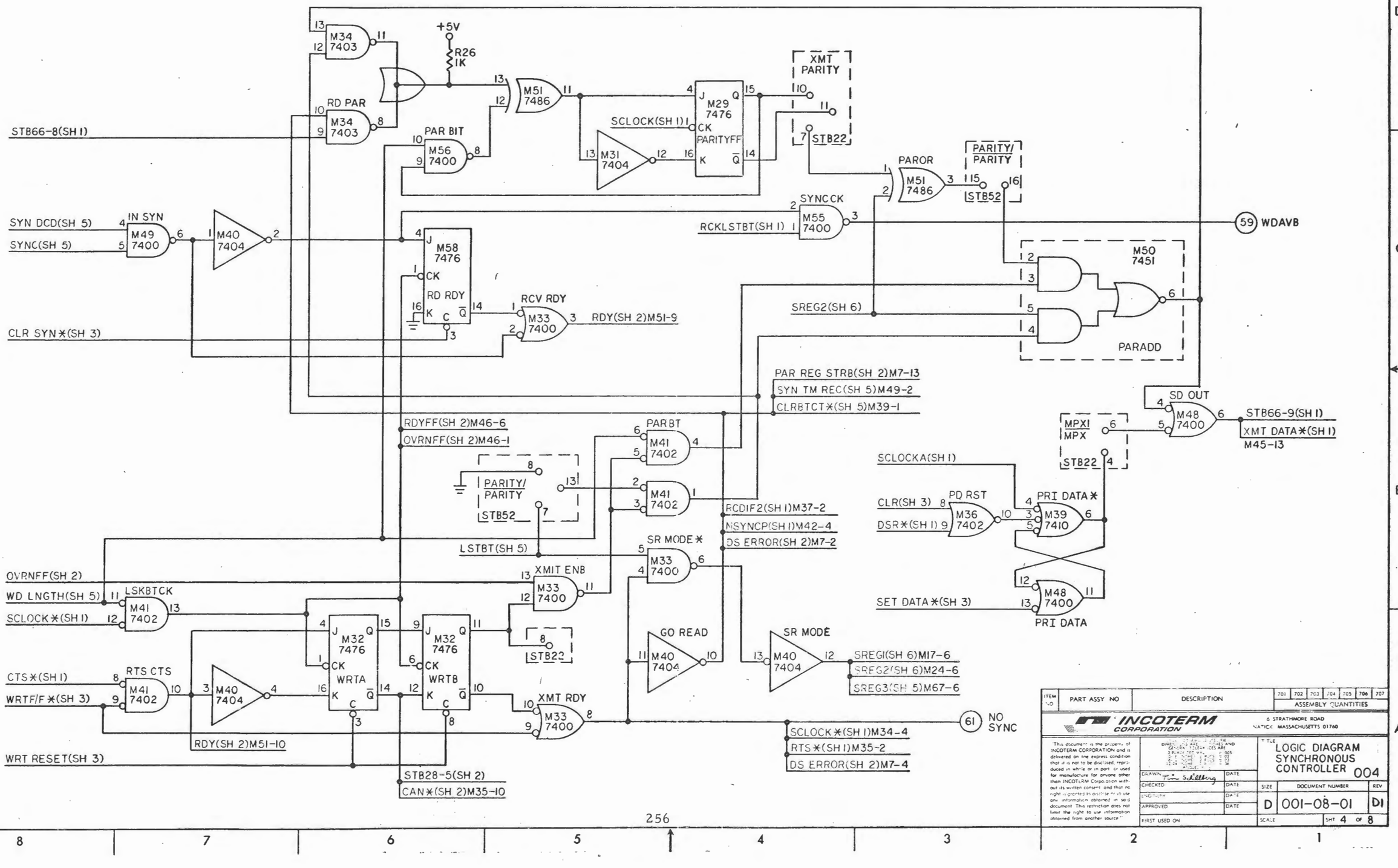
DRAWN Tim Schilling — DATE
CHECKED — DATE
ENGINEER — DATE
APPROVED — DATE
FIRST USED ON

TITLE: LOGIC DIAGRAM SYNCHRONOUS CONTROLLER 004

SIZE	DOCUMENT NUMBER	REV
D	001-08-01	D1

SCALE — SHT 3 OF 8

8 7 6 5 4 3 2 1



REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or to use any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
GENERAL TOLERANCES ARE
.X ± .005
.XX ± .010
.XXX ± .005
ANGLES ± 1°

DRAWN Jim Schilling DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE
FIRST USED ON

TITLE
LOGIC DIAGRAM
SYNCHRONOUS
CONTROLLER 004

SIZE	DOCUMENT NUMBER	REV
D	001-08-01	D1

SCALE SHT 4 OF 8

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

OPTION BLOCK

SR MODE(SH 4)

SCLOCKA(SH 1)

M67 7495 SREG3 — MODE QD, SCK QC, PCK QB, SI, QA

SREG2(SH 6)

M65 7410

M53 7402

12 BTSYN

STB16

+5V

R20 1K

ST822 — ST823 — SYNC DET

SYNC — M30 7402 — IN SYN(SH 4)M49-5 — IN RDMODE(SH 2)M14-1

CLRBTCT — M39 7410

CLR SYN*(SH 3)

GO READ(SH 4)

M38 7476 SSR1 — M30 7402 — M29 7476 SSR2 — M56 7400

M50 7451

STB15 — SYNC CODE — SYN DCD — MI8 7430

M31 7404

RCKLSTBT(SH 1)M36-6

LSKBTCK(SH 4)M41-11

PARBIT(SH 4)M56-10

PARBT(SH 4)M41-6

IN SYN(SH 4) M49-4

SYN TM REC — M49 7400 — SCLOCKA(SH 1)

M57 7402

STB16 — TIMING — LSTBT* — M39 7410

LSTBT — M31 7404

M48 7400 — M49 7400 — M40 7404 — M57 7402

SCLOCK(SH 1)

STB52-7(SH 4)

SR MODE * (SH 4)M33-5

M38 7476 BT2° — M30 7402 — M47 7476 BT2¹ — TIMING STB15 — M56 7400 — M47 7476 BT2² — M56 7400

BTCTRENB — M49 7400 — TURNAROUND(SH 3) — M40 7404

TIMING STB15

ITEM NO	PART. ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND SET BY STANDARD TOLERANCES ARE
2 PLACE ± .02
3 PLACE ± .010
4 PLACE ± .005
FRACTIONS ± 1/64
ANGLES ± 30'

DRAWN Tom Schlesberg — DATE
CHECKED — DATE
ENGINEER — DATE
APPROVED — DATE
FIRST USED ON

TITLE: LOGIC DIAGRAM SYNCHRONOUS CONTROLLER 004

SIZE	DOCUMENT NUMBER	REV
D	001-08-01	D1

SCALE — SHT 5 OF 8

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

BO7 (45) INBO7 (18) BO6 (47) INBO6 (16) BO5 (49) INBO5 (14) BO4 (51) INBO4 (12) BO3 (41) INBO3 (10) BO2 (39) INBO2 (8) BO1 (43) INBO1 (6) BO0 (46) INBO0 (4)

IN7 MIO 7403 · IN6 MIO 7403 · IN5 MIO 7403 · IN4 MIO 7403 · IN3 M3 7403 · IN2 M3 7403 · IN1 M3 7403 · IN0 M3 7403

SEL OREG(SH 3)

MI2 7475 · M5 7475

REG STRB B(SH 2)

REG STRB A(SH 2)

STB66-8(SH 1)

STBI5-1 · STBI5-16 · STBI6-16 · STBI6-3 · STBI6-2 · STBI6-4 · STBI5-15 · STBI5-14

M8 7451 · M9 7451 · M2 7451 · MI 7451

OUT7 · OUT6 · OUT5 · OUT4 · OUT3 · OUT2 · OUT1 · OUT0

RD REG ENB(SH 2)

WRT REG ENB(SH 2)

OTB07 (17) 08 90
OTB06 (15) 07 100
OTB05 (13) 06 110
OTB04 (11) 05 120
OTB03 (9) 04 130
OTB02 (7) 03 140
OTB01 (5) 02 150
OTB00 (3) 01 160
STB68

STB22-1 · STB22-16 · STB23-8 · STB23-6 · STB23-1 · STB23-7 · STB22-15 · STB22-2

WORD LENGTH

MI7 7495 SREGI · M24 7495 SREG2

D4 D3 D2 D1 · SI · SCK · PCK · Q1 Q2 Q3 Q4 MODE

SCLOCKA (SH 1)

SRMODE(SH 1)

SYNC CODE

MI1 7404

STBI6

STB23-5 · STB23-4 · STB23-3 · STB23-16 · STB23-2 · STB23-15 · STB23-14 · STB23-13

12 BTSYN(SH 5) M65-2

PAROR(SH 4) M51-2

PARADD(SH 4) M50-5

SREG3(SH 5) M67-1

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE:
ANGULAR ± 1°
.X ± .1
.XX ± .03
.XXX ± .010
.XXXX ± .005
AVOID SHARP EDGES

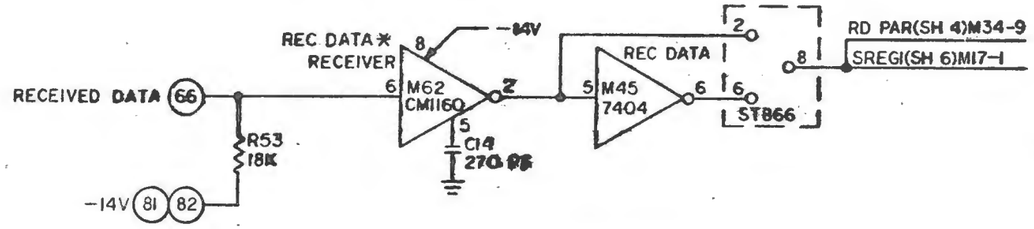
DRAWN Tom Schillers	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

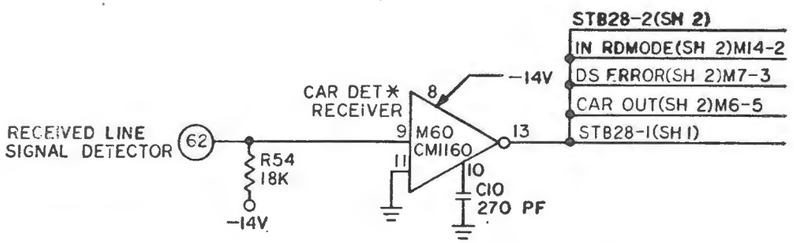
TITLE: LOGIC DIAGRAM SYNCHRONOUS CONTROLLER 004

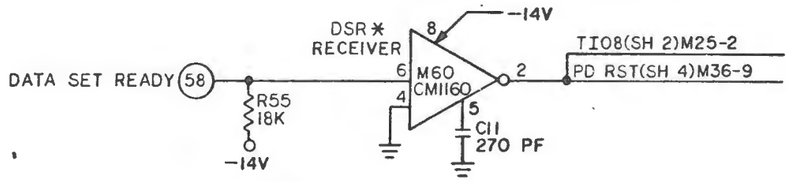
SIZE	DOCUMENT NUMBER	REV
D	001 08 01	DI

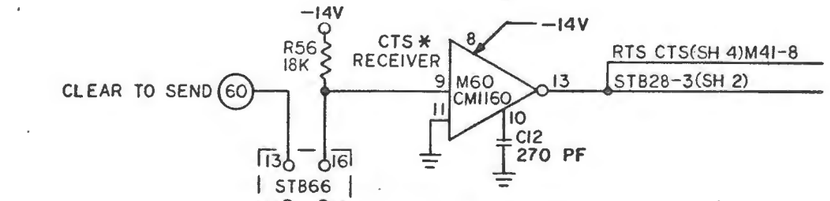
SCALE · SHT 6 OF 8

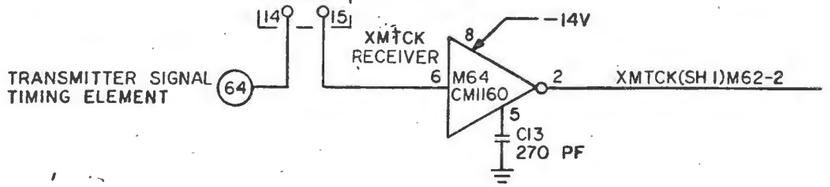
REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

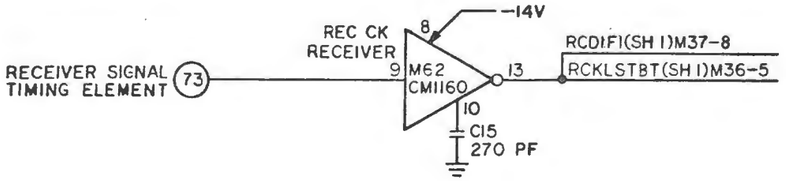


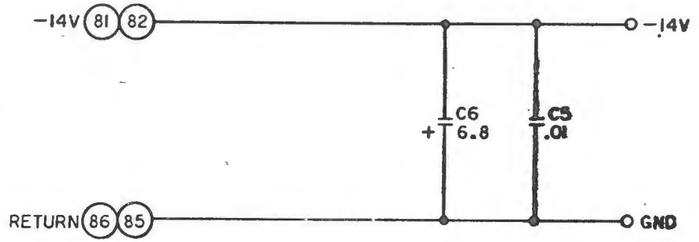


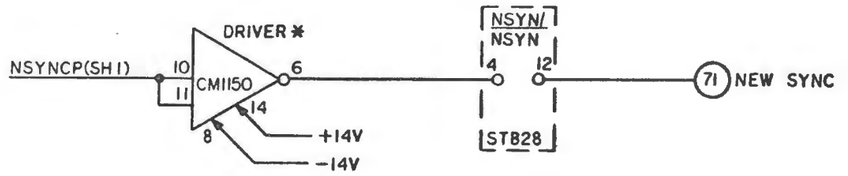


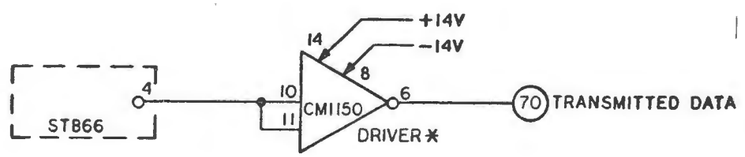


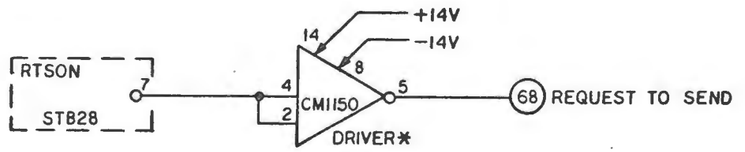












APPLICABLE TO P/C BOARDS USING ARTWORK REV A&B ONLY

ITEM NO	PART/ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document ... the property of INCOTERM CORPORATION and is delivered on the express ... upon the condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE GENERAL TOLERANCES ARE: X ± .1, .XX ± .02, .XXX ± .005, ANGLES ± 1°

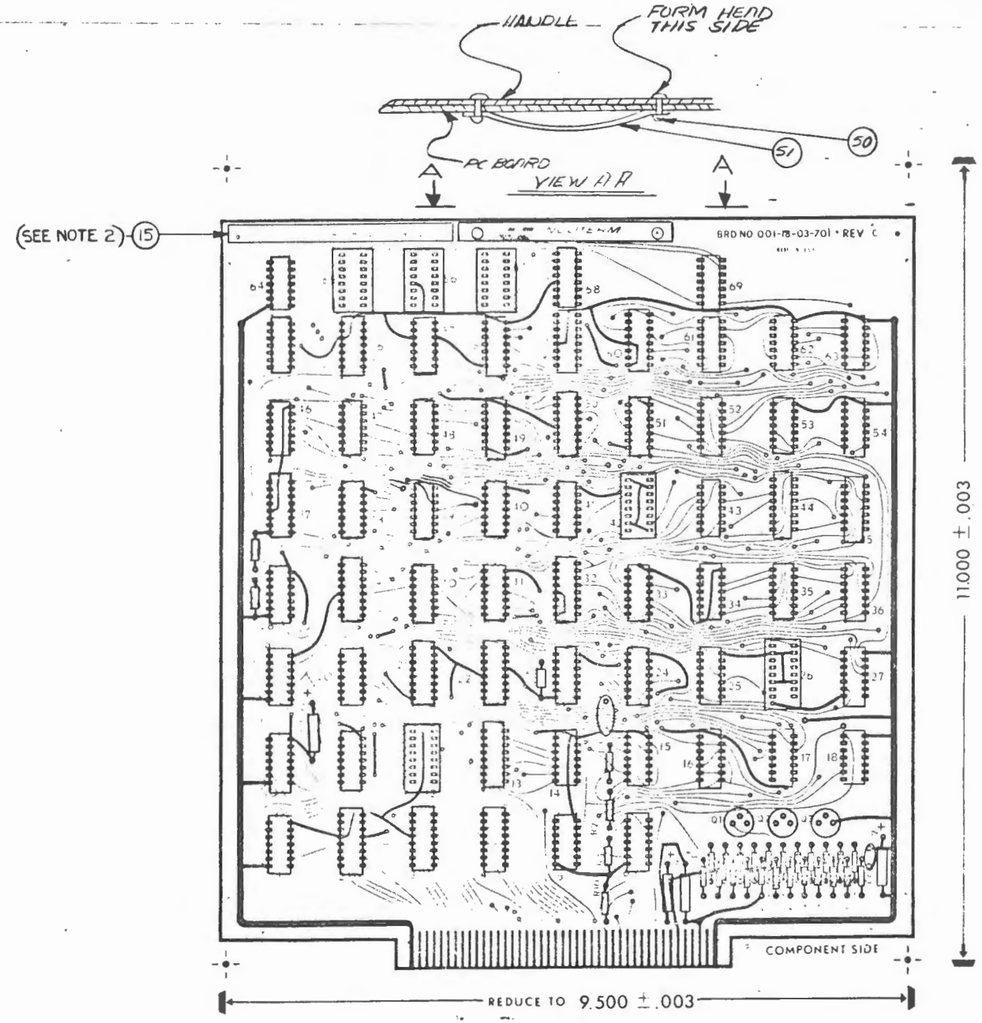
DRAWN Tom Schilberg	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

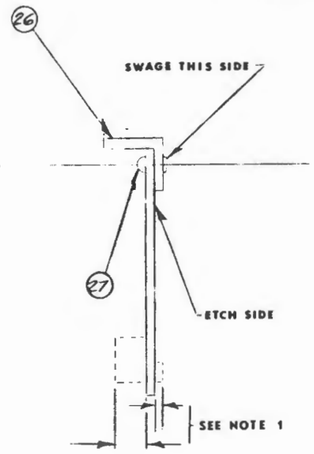
TITLE: LOGIC DIAGRAM SYNCHRONOUS CONT 004

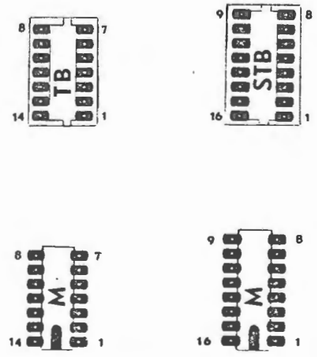
SIZE	DOCUMENT NUMBER	REV
D	001-08-01	DI

SCALE | SHT 7 OF 8

REVISION HISTORY				
REVISION		DESCRIPTION	DATE	CHK
G		RELEASED/ECO1759	6/4/82	21/0/82 KMH
	G1	ECO 2114 CHANGES THIS DOCUMENT		
STRUCTURE PER PROCEDURE 300-002. FOR CONTINUING ASSIGNMENT HISTORY.				







PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
47	C6
46	Q3
45	Q1,2
44	CR5
43	CR1,2,3,4,6,7,8,9,10,11,12
42	R18
41	R14,16,17
40	R15
39	R12
38	R11
37	P13
34	R20
24	C5
23	C3,4
22	C1,2
20	R3
19	R1,2,4,5,6,9,10,19
18	STB1,2,26,42,65,66,67
17	TB69
14	M5,14
13	M55,56,57
12	M22,29,32,37,44,50,59,60,68
11	M2,3,4,13
10	M41,47,48,53
9	M21
8	M17,49
7	M64
6	M27,36,61
5	M19,24,33,39
4	M11,20,31,34,46,52
3	M1,6,10,23,28
2	M30,40,51,58,62,63,64
1	M15,18,25,35,43,45

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 15, AND MARK ASSY. NO. 001-18-02-701 AND LATEST ASSY REVISION.

COMPONENT SIDE

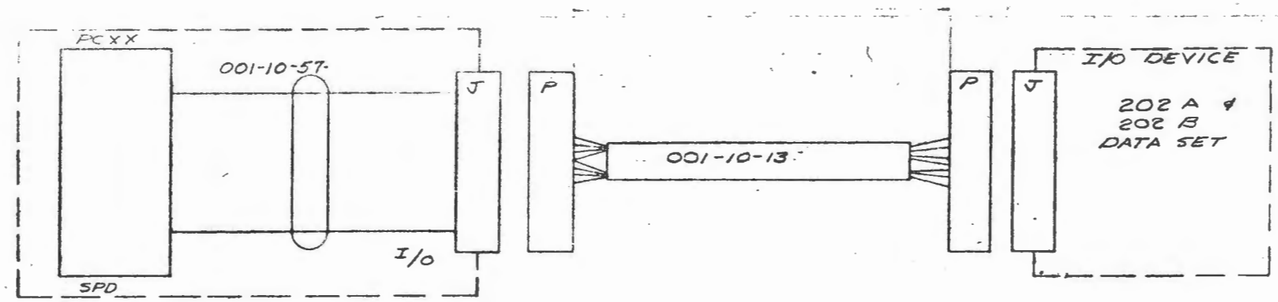
ASSEMBLE WITH ARTWORK 001-18-03-701 REV C

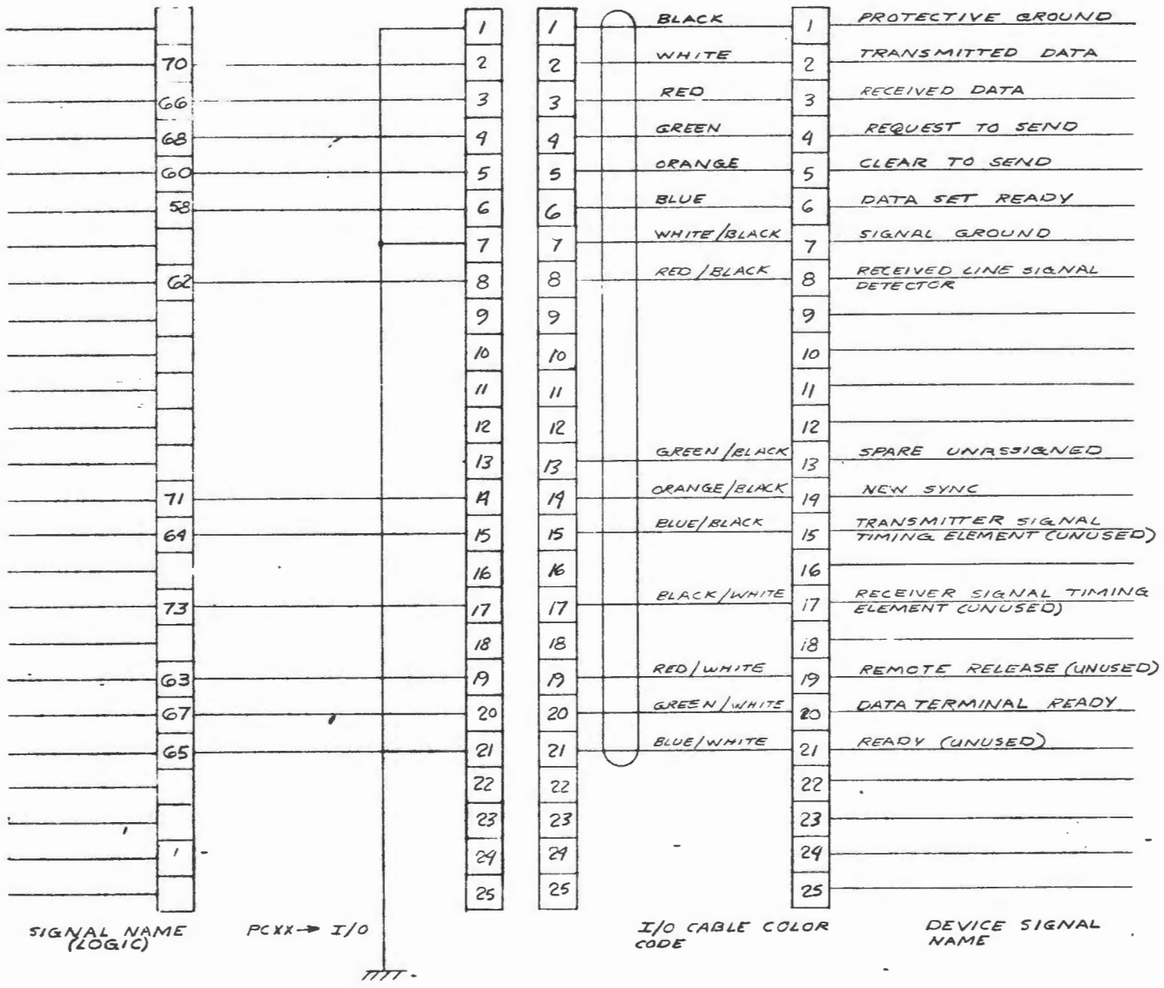
INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2

DR R. FREDERICK	3/1/71	
CHK R. BIGGERS	3/4/71	
ENG D. VAN DYNE	3/15/71	
APPD F. LONDRES	3/17/71	
NEXT ASSY 001-18-04		

TITLE: P.C. BOARD ASSY PARTY LINE CONTROLLER 701
SIZE D | 001-18-02 | REV G4
SCALE 1:1 | SHT 5 OF 5

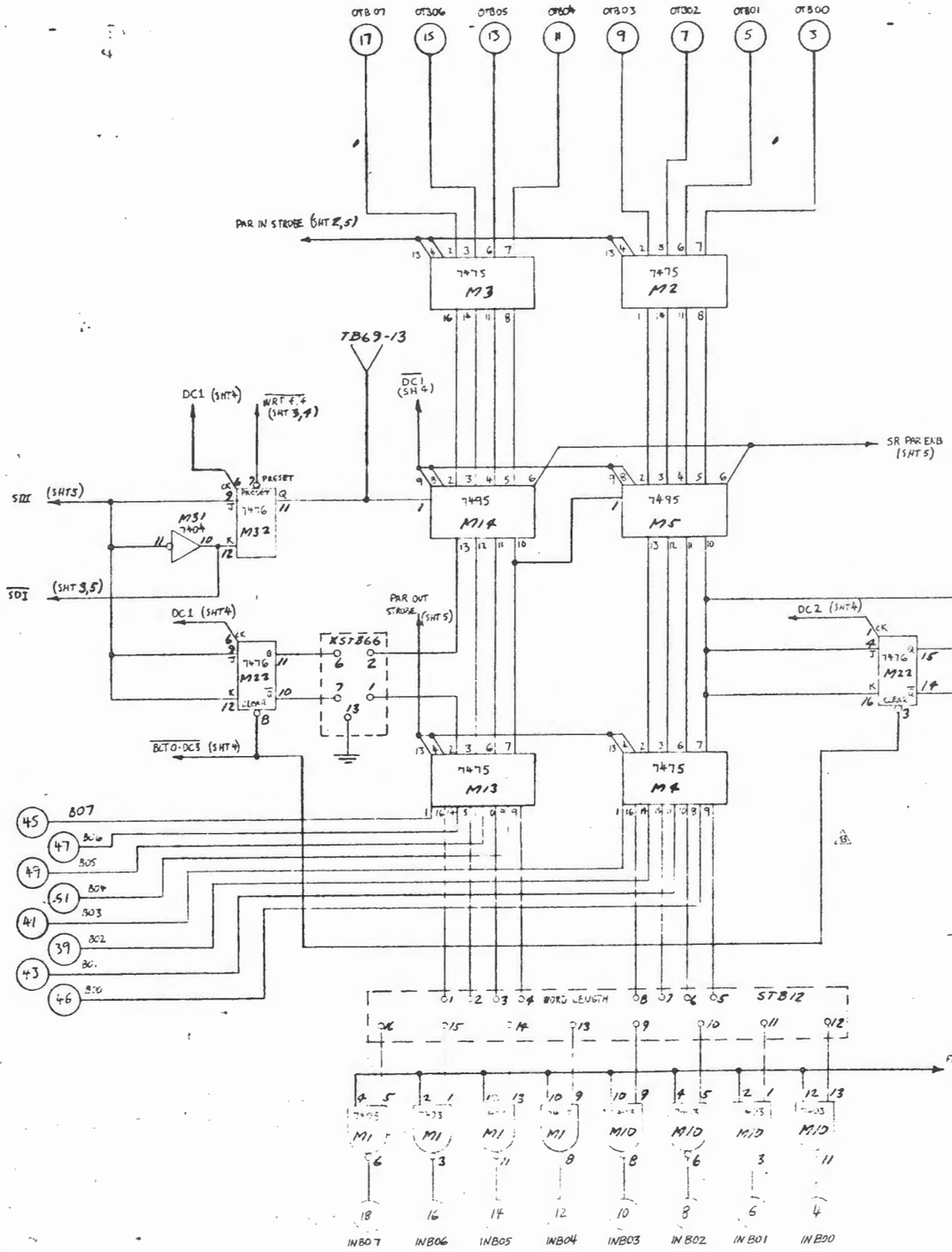


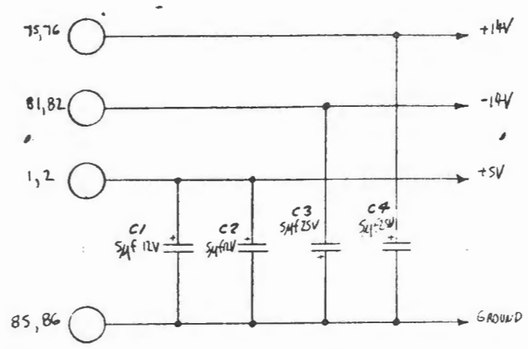


PARTY LINE CONTROLLER

001

001-18-01





PARTY LINE CONTROLLER

001

001-18-01 E

2 OF 6

REVISIONS			
REV	DESCRIPTION	CHK	APPD

TB69-11

BCTO DC3 (SHT 4)

WRT 4/E (SHT 3,4,5)

XMIT MODE

61

WRT ff (SHT 2,4)

CTS·WRT FF SHT 3

1ST WRT (SH 3,5)

CTS·WRT ff1 (SHT2)

28 ADDXX

19 TYP00

21 TYP01

(WIO+RIO)(ADDXX) (SHT3,5)

CIO (SHT 5)

BCTO DC3 (SHT4,5)

INT WRT ENB SH5

TB69-1

BCTO DC2 WRITE (SHT4)

CTS (SH 5)

+5V

R1 1K

DSR+CANCEL (SHT4)

DSR+CANCEL (SH 2)

20 FUNC 00

22 FUNC 01

24 FUNC 02

26 FUNC 03

40 (SHT3,5)

40 (SHT3)

41 (SHT3)

42 (SHT3)

43 (SHT3)

CIO DATA (SHT2)

TB69-10

UNMASK (SH 5)

RESET

25

RESET (SHT5)

RESET (SHT25)

CTS (SHT 5)

SDI (SHT 2,5)

(SH 5)

(WIO+RIO) ACK

R4 1K

ACK

27

BOOT (SHT 5)

1K +5V R7

55 CONTROLLER BOOT

BCT B (SHT 4)

RDY 4/E (SHT 5)

37 TURT4

TURT4 (SHT4)

(WIO+RIO)(ADDXX) (SHT 3)

15 LOST (SHT3)

LB (SHT 5)

CARRIER DETECTED

69

R2 1K

R3 47Ω

.001pf C5

R (SHT 5)

CD (SHT4)

CTS (SHT 3)

CTS·WRT (SH 2,4,5)

CTS WRT FF SHT3

WRT 4/E (SHT 3,4,5)

F1 (SHT3)

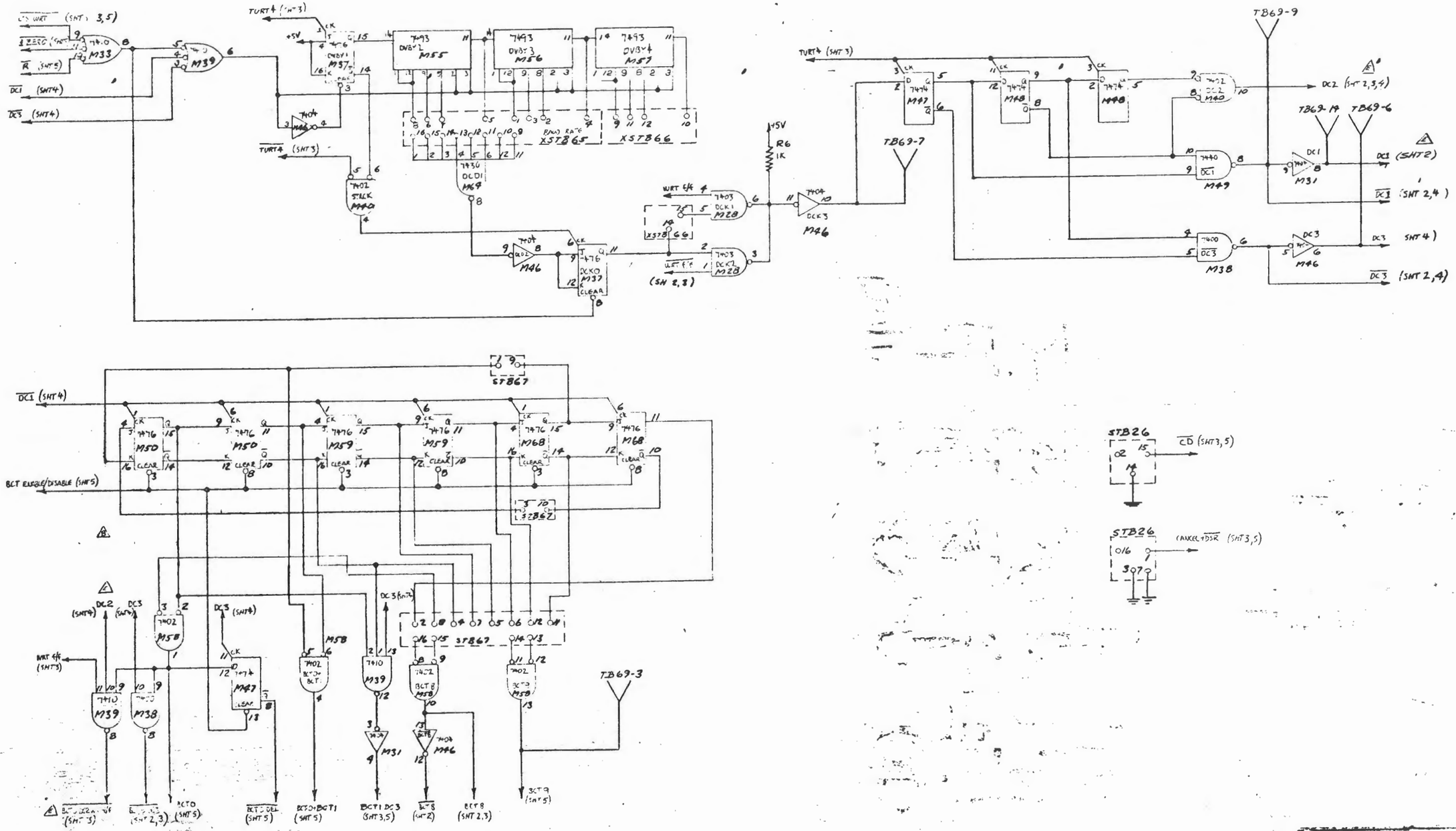
F2 (SHT 3)

F3 (SHT 3)

PARTY LINE CONTROLLER

001

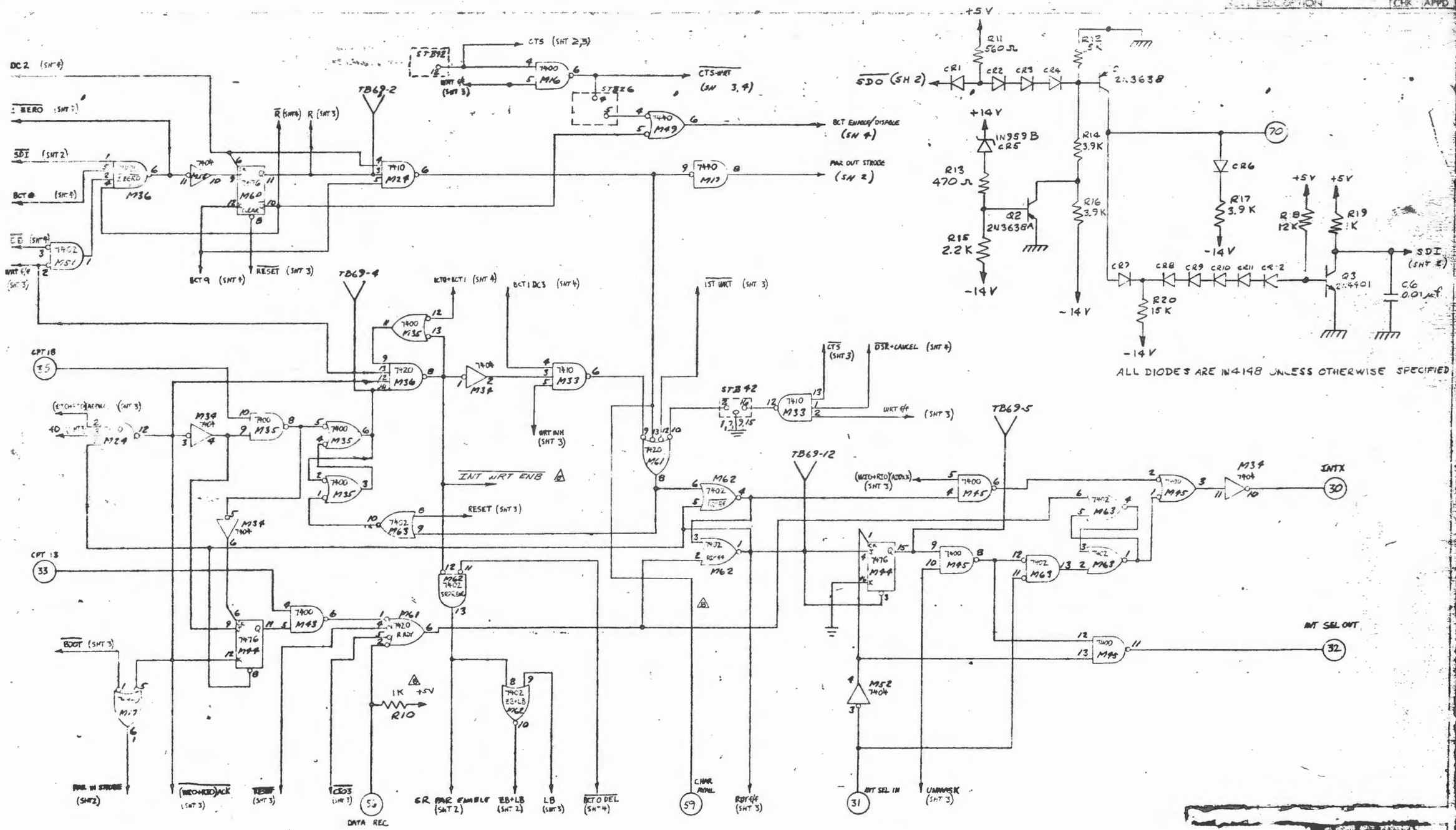
001-18-01 E



PARTY LINE CONTROLLER

001

001-18-01 E



PARTY LINE CONTROLLER

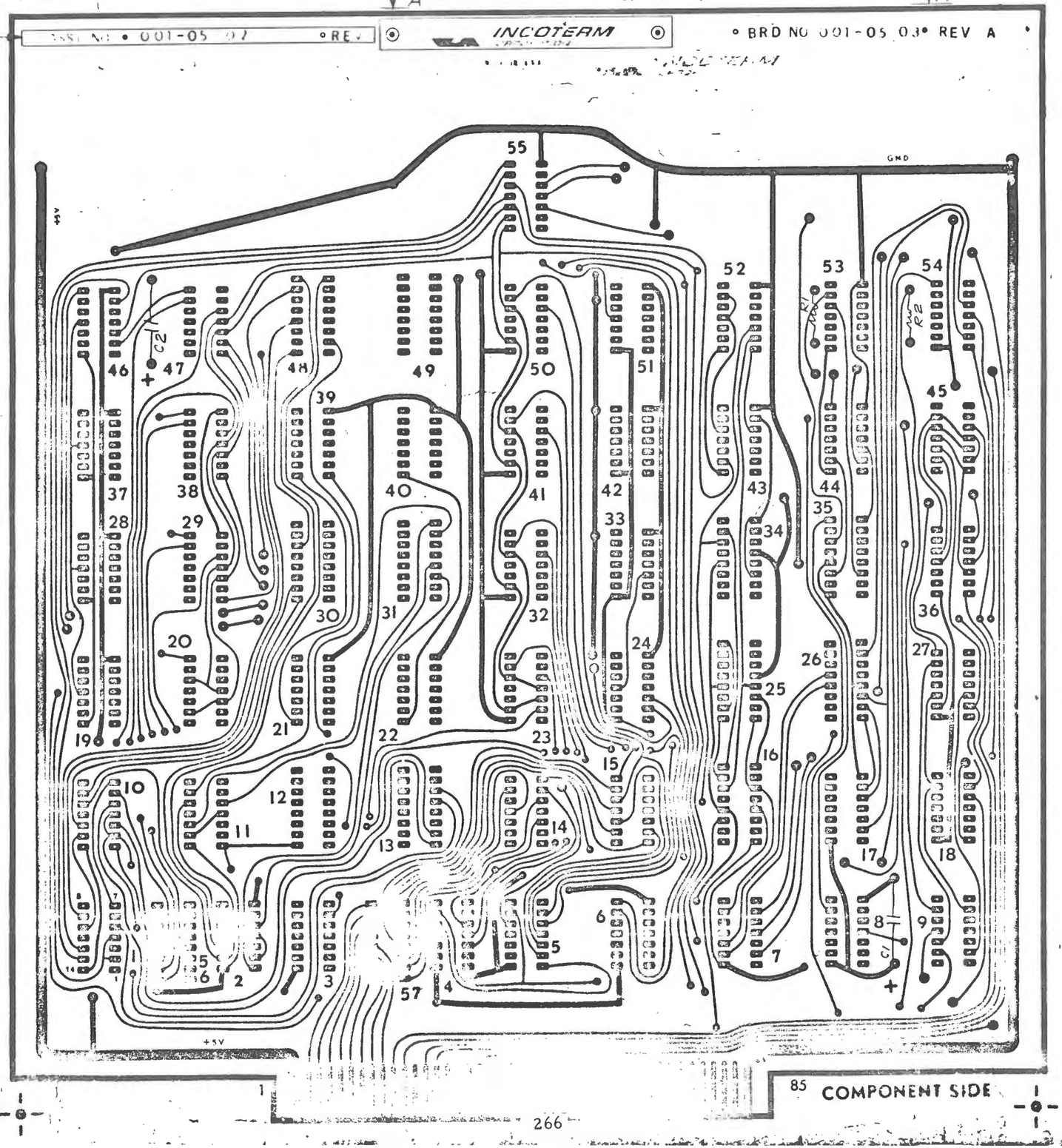
01-18-01 E

SEE NOTE 1 (30)

ASSY NO • 001-05-02 • REV

INCOTERM

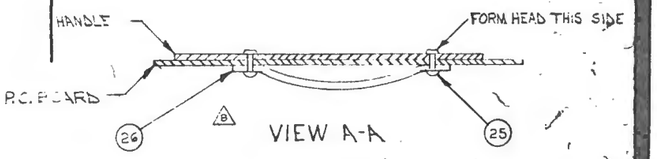
• BRD NO 001-05-03 • REV A



NOTES:

1. LOCATE IN APPROXIMATE AREA SHOWN, REVISION LABEL, ITEM 30, AND MARK ASSY. NO. 001-05-02-701 AND LATEST ASSY. REVISION.

REVISIONS			
REV	DESCRIPTION	CHK	APPD
A	RELEASED / EC1363 2-1971	N	
B	ECO 1439 RDF 5-4-71		
B1	REV CHANGE ONLY/ECO 2065		
B2	REV CHANGE ONLY, ECO 2101		
B3	REV. CHANGE ONLY/ECO 2378		
C	REVISED/ECO 2440 6/28/73		
C1	REV. CHANGE ONLY/ECO 2477		



11.000 ±.003

ITEM NO.	PART NO.	REF DESIGNATION	QTY
23			
22			
21			
20	ICSN74180N	M17	1
19	EC7599	TP55	1
18	EC7541	STB1,2,3,26,32,31,48,49,56,57	9
17			
16			
15			
14	CSTE1127	C1, C2	2
13	RSC0356F10J	R1, R2	2
12	ICSN7495N	M4, 5	2
11	ICSN7486N	M21, 22, 39, 40	4
10	ICSN7400N	M16, 25, 34, 35	4
9	ICSN7404N	M7, 20, 23, 33, 42, 46, 51	8
8	ICSN7451N	M12, 24, 27, 32, 38, 41, 47, 50	8
7	ICSN7490N	M3, 6, 43	3
6	ICSN7410N	M45	1
5	ICSN7430N	M53	1
4	ICSN7420N	M9, 14, 15, 36	4
3	ICSN7403N	M1, 8, 10, 11	4
2	ICSN7400N	M18, 27, 52	3
1	ICSN7400N	M13, 37, 54, 55	4

ASSEMBLE WITH ARTWORK 001-05-03-701 REV. A

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written permission and the information obtained from another source.

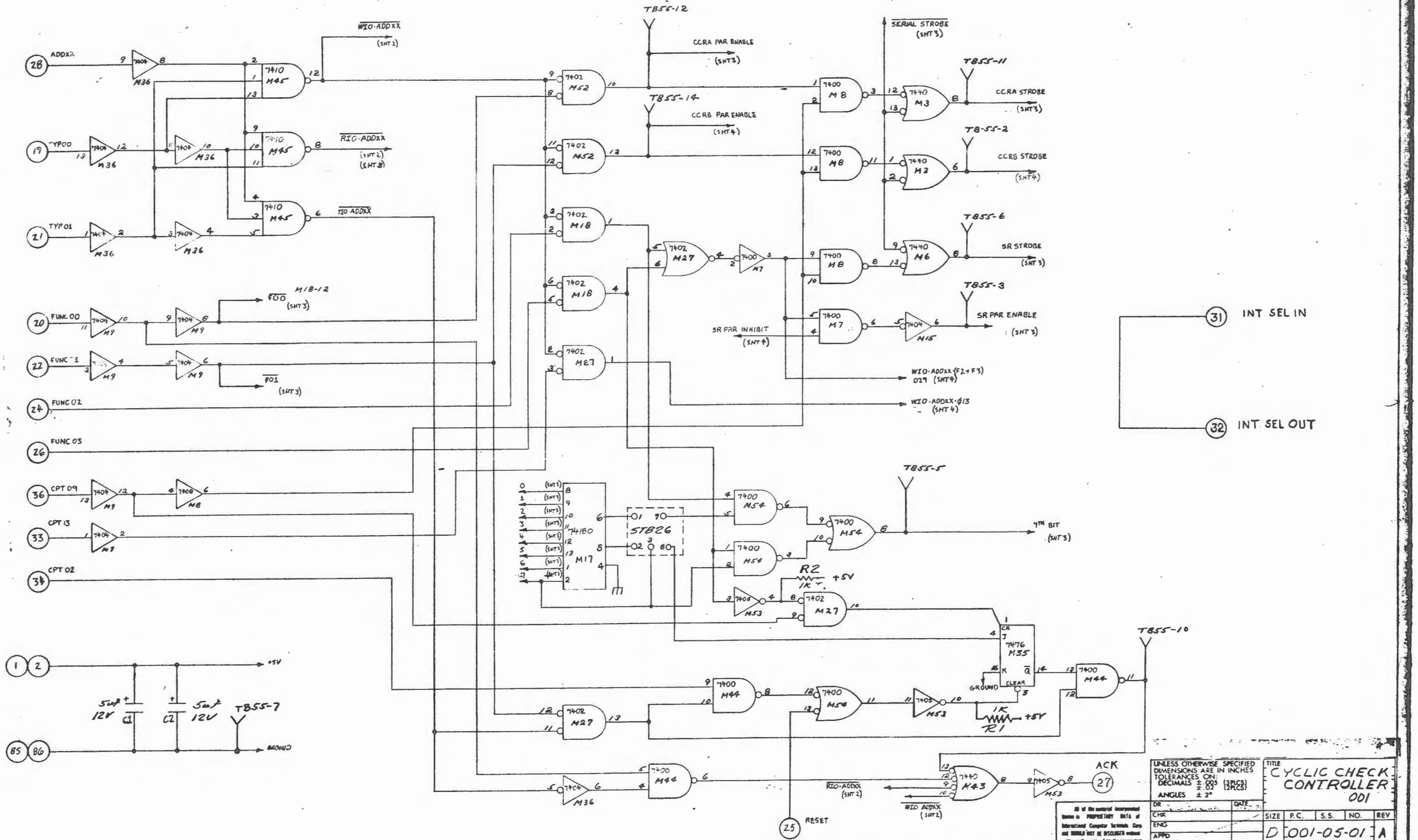
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DRN [illegible] DATE 5-3-71
CHK [illegible] 5-3-71
ENG [illegible] 5-3-71
APP [illegible] 5-11-71

TITLE
ASSEMBLY
P.C. BOARD
Cyclic Check 7/A

SIZE	P.C.	S.S.	NO.	REV
D	001-05-02			C1

SCALE 2/1 SHT 1 OF 1



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS ± .005 (3PLCS) ± .03 (2PLCS)
ANGLES ± 2°

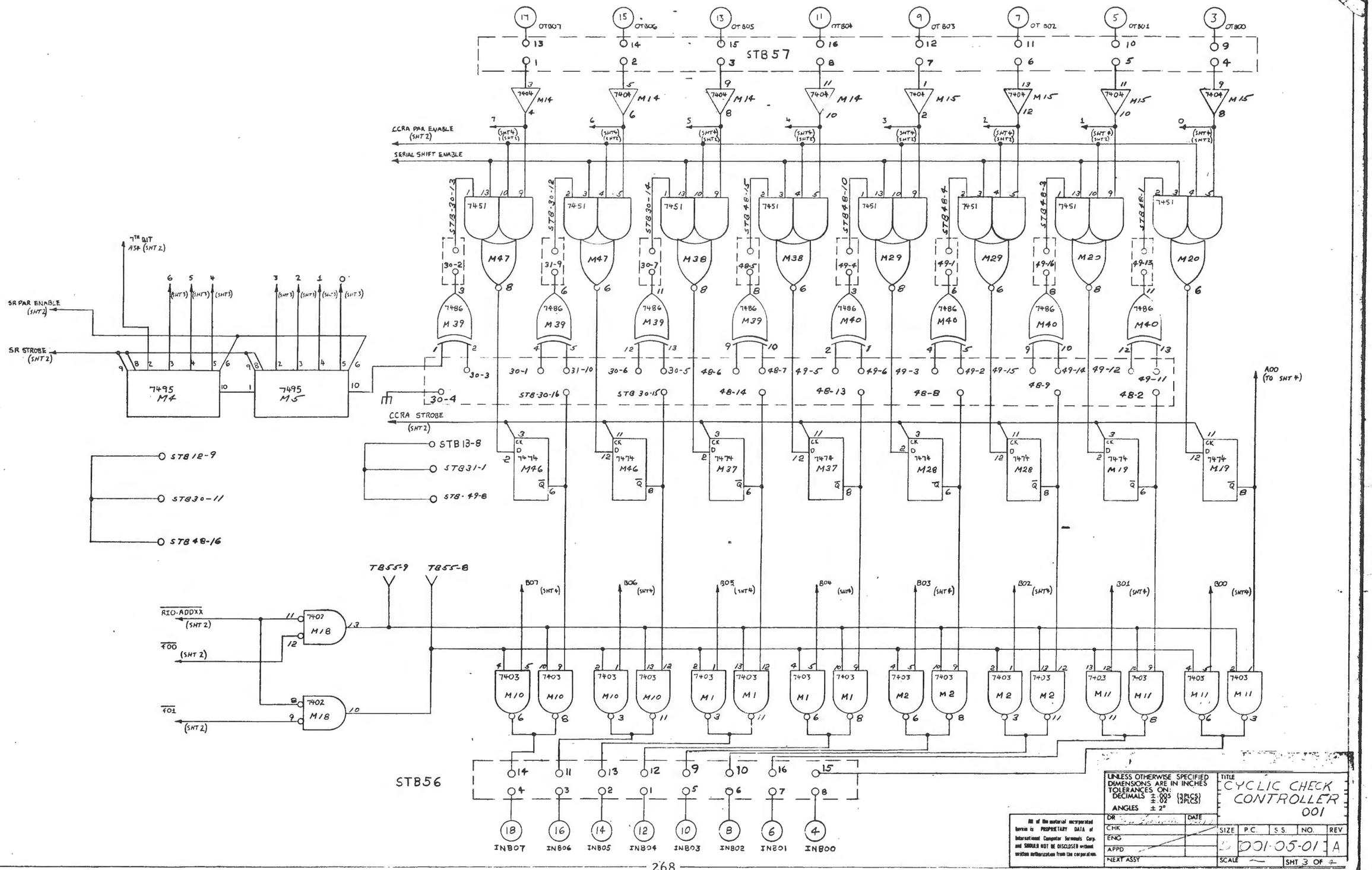
All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.

DR | DATE
CHK
ENG
APPD
NEXT ASSY

TITLE: CYCLIC CHECK CONTROLLER 001

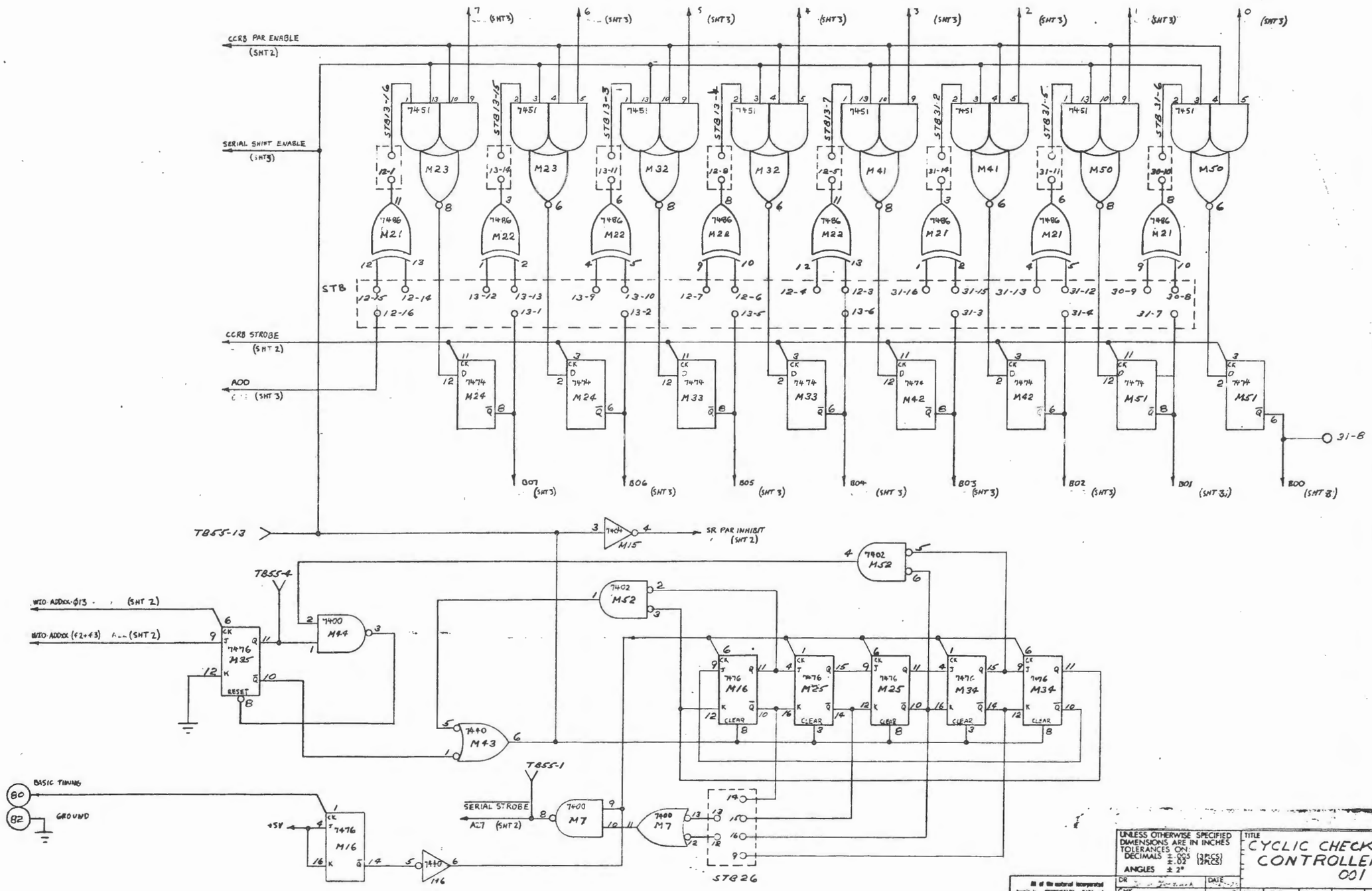
SIZE	P.C.	S.S.	NO.	REV
D	001-05-01			A

SCALE — SHT 2 OF 4



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: DECIMALS ± .005 (3PLCS) ± .02 (2PLCS) ANGLES ± 2°	TITLE: CYCLIC CHECK CONTROLLER 001
DR / DATE	SIZE: D
CHK	P.C.: 001-05-01
ENG	S.S.
APPD	NO.
NEXT ASSY	REV: A
	SCALE — SHT 3 OF 4

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS ± .005 (2PLCS) ± .02 (3PLCS)
ANGLES ± 2°

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.

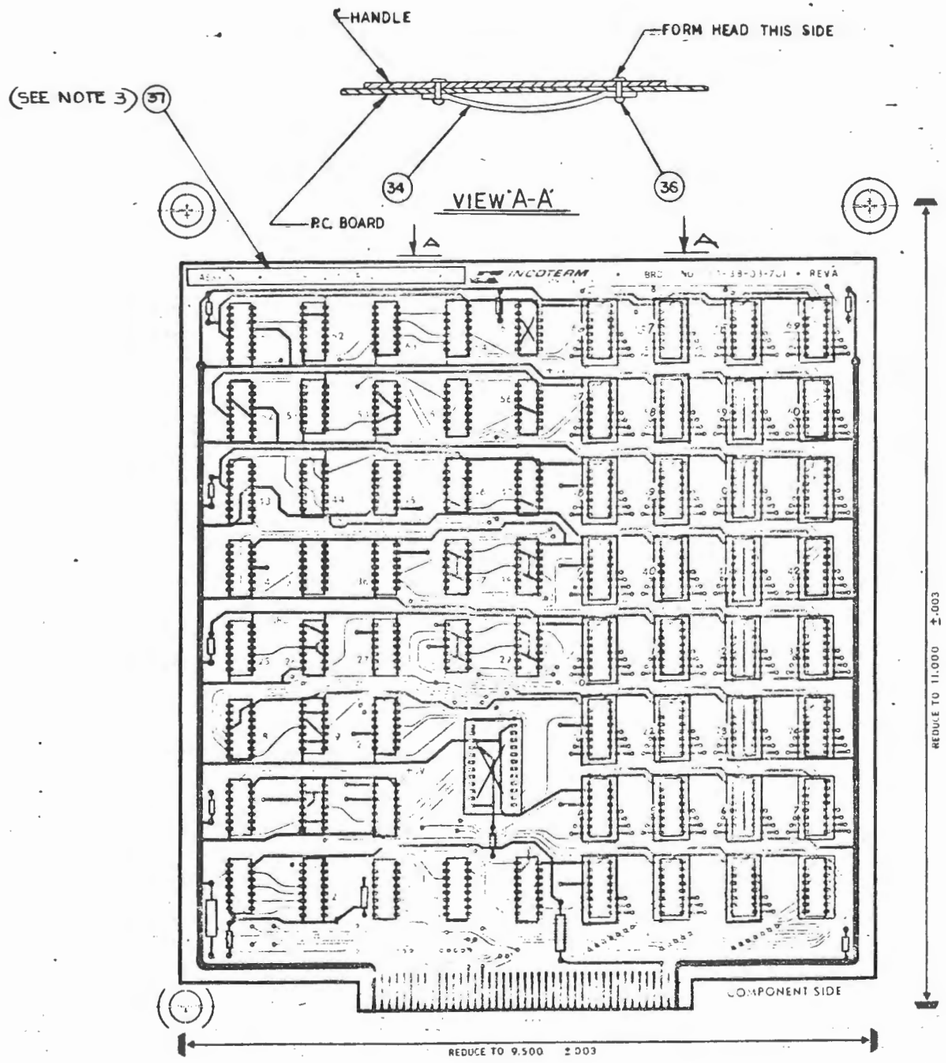
	DR	DATE
	CHK	
	ENG	
	APPD	
	NEXT ASSY	

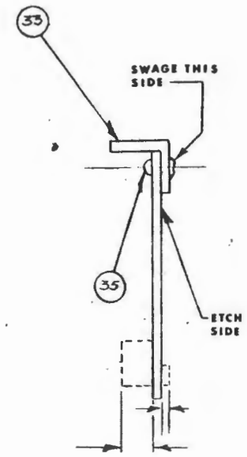
TITLE: CYCLIC CHECK CONTROLLER 001

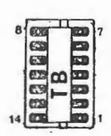
SIZE	P.C.	S.S	NO	REV
D	001-05-01			A

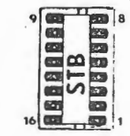
SCALE — SHT 4 OF 4

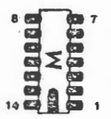
REVISION HISTORY				
REVISION		DESCRIPTION RD#573	DATE	CHK
A		RELEASED		
	A1	REV CHANGE ONLY/ECO 2277		
	A2	REV. CHANGE ONLY/ECO 2376		
	A3	REV. CHANGE ONLY/ECO 2477		











PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
30	SOCKET M6-9,14-17,21-24,30-33, 39-42,48-51,57-60,66-69
29	SOCKET M23
26	C3-C11
25	C1
24	C2
23	R1
19	M6-9,14-17,21-24,30-33, M39-42,48-51,57-60,66-69
18	M3,4,5
17	M27,36,45
16	M55
15	M43,52,61
14	M56
13	M54
12	M2,18
11	M25
10	M1,12,20,35,63
9	M10,28,29,37,38,46,47
8	M11,19,26,53
7	M34,44,62,64
6	
5	
4	
3	
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
   2 PATTERNS MARKED X NOT USED
3. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 37, AND MARK ASSY. NO. 010-38-02-710A AND LATEST ASSY. REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-38-03-701 REV. A

INCOTERM CORPORATION
Hayes Memorial Drive
Marborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DR R. Lamphere 12-7-73
CHK J. Rose 12/13/73
ENG P.A. Hall 12/17/73
APPD
NEXT ASSY 010-10-00701

TITLE P.C. BOARD ASSY CYCLIC CHECK CODE CONVERTER BUFFER 71CA

SIZE	PC	SS	NO	REV
D	010-38-02			A3

SCALE 1:1 SHT 1 OF 1

REV	DESCRIPTION RD# 573	CHK	APPV
A	RELEASED		

+5V (1)(2) Vcc — C1 47uf 10V; C3 C5 C6 C7 C8 C9 C10 C11 .1
GND (85)(86) GND — C2 8.2uf 25V; C4 .1
-14V (81)(82) -14V

FUNCØØ (20) → 7404 FUNCØØ M1 → 7442 FNDEC M12
FUNCØ1 (22) → 7404 FUNCØ1 M1 → 7442 FNDEC M12
FUNCØ2 (24) → 7404 FUNCØ2 M1 → 7442 FNDEC M12
FUNCØ3 (26) → 7404 FUNCØ3 M1 → 7442 FNDEC M12

TYPØØ (19) → 7442 TPDEC M18
TYPØ1 (21) → 7442 TPDEC M18
ADDXX (28) → 7442 TPDEC M18

CPT13 (33) → 7404 CK13# M1
CPTØ9 (36) → 7404 CKØ9* M35 → 7404 CKØ9 M35

7402 WIO1 M53 → PDCCR[6] (SN2); PDCCR[5] (SN2); X'4X4' (SN2)
7402 WIO3 M11 → WIO3* (SN3)
7402 WIO4 M19 → 7402 (WIO4 + WIO8)* M19 → 7404 WIO4 + WIO8 M35
7402 WIO8 M19
7402 WIO5 M19 → WIO5* (SN3)
7402 WIO6 M11 → R10B+WIO6 (SN3); 7404 WIO6* M12 → BM1[0] BM1[1] BM1[2] BM1[3] BM1[4] BM1[5] BM1[6] BM1[7] (SN4)
7402 WCK13 M11
7402 TIO1 M26 → 7404 TIO1# M35 → 7410 ACK M25
7402 RIO1 M26 → INB[0]C INB[1]C INB[2]C INB[3]C INB[4]C INB[5]C (SN2)
7402 RIO4 M26 → INA[0]A INB[0]A INB[1]A INB[2]A INA[3]A INA[4]A INB[5]A INB[6]A INA[7]A (SN3)
7402 RIO8 M26 → RIO8* INB[0]B INB[1]B INB[2]B INB[3]B INA[4]B INB[5]B INB[6]B INA[7]B (SN4)

(SN3) STB* → 7400 CCRSTB M62 → X'4X4' (SN2); CCRSTB* (SN2)
7400 CCRSTRB M44
7400 SASTB M44 → SRA (SN2); SRB (SN2)
7400 SRSTRB M44
7400 SRPAREN M44 → 7404 SRPAREN M63 → SRA(SN2) SRB(SN2)
(SN3) PARINH
(SN3) R60EN → 7400 R60* M34
7476 GC M43 → STOP* (SN3)

7403 ACK M10 → (27) ACK

(32) INTSEL OUT
(31) INT SEL IN

INCOTERM CORPORATION — Bayer Chemical Drive, Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is disclosed on the express condition that it is not to be disclosed, reproduced in whole or part or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .005 (2PLCS) .02 (2PLCS) ANGLES 2°

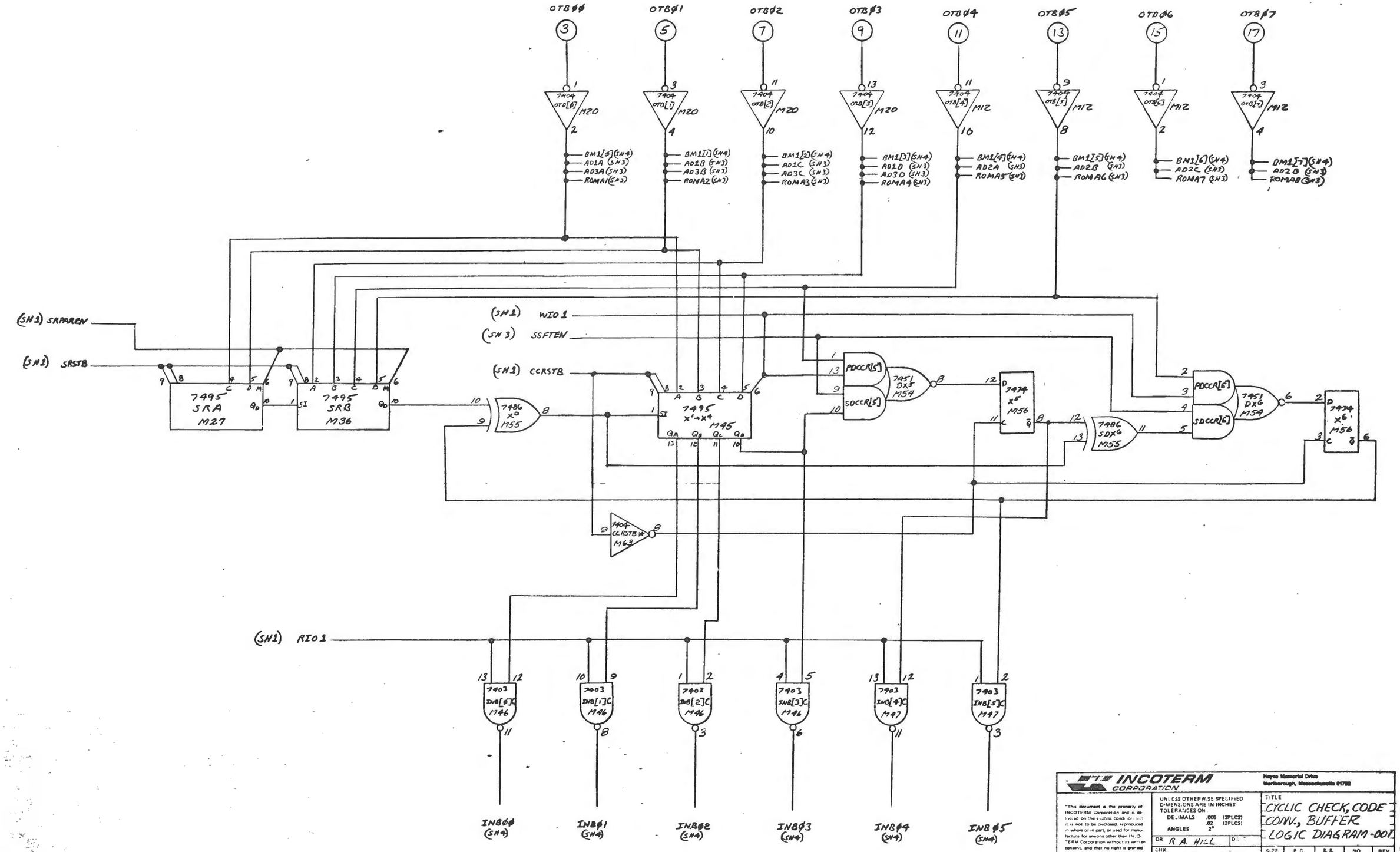
		DATE
DR	R.A. HILL	
CHK	C SHEPPEY	12/14/72
ENG	R.D. Hall	1/1/73
APPD		1/1/73

NEXT ASSY 010-38-02-701

TITLE: CYCLIC CHECK, CODE CONV., BUFFER, LOGIC DIA. -001

SIZE	P.C.	S.S.	NO	REV
D	010-38-01			A

SCALE — SHT 1 OF 4



"This document is the property of INCOTERM Corporation and is disclosed on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

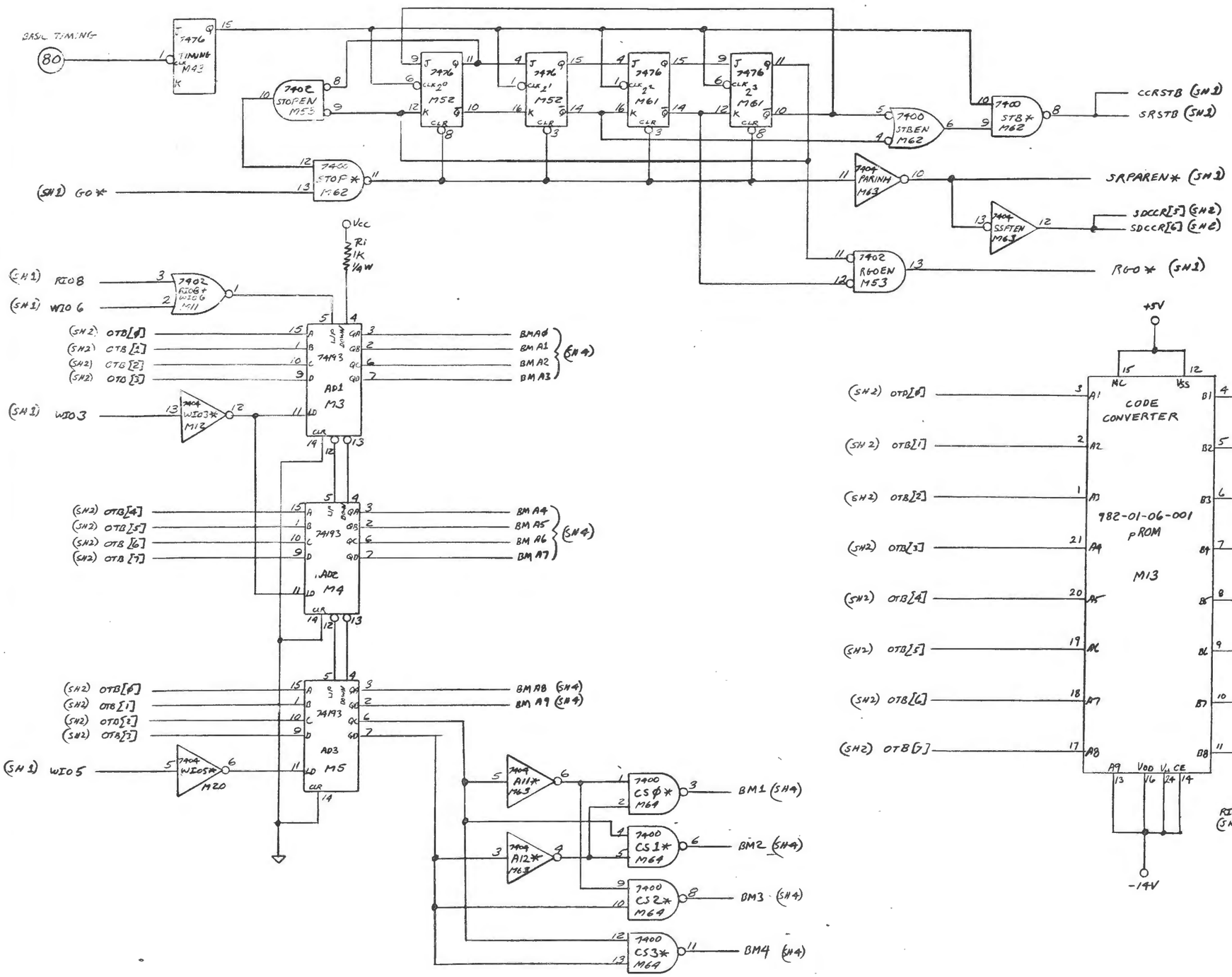
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

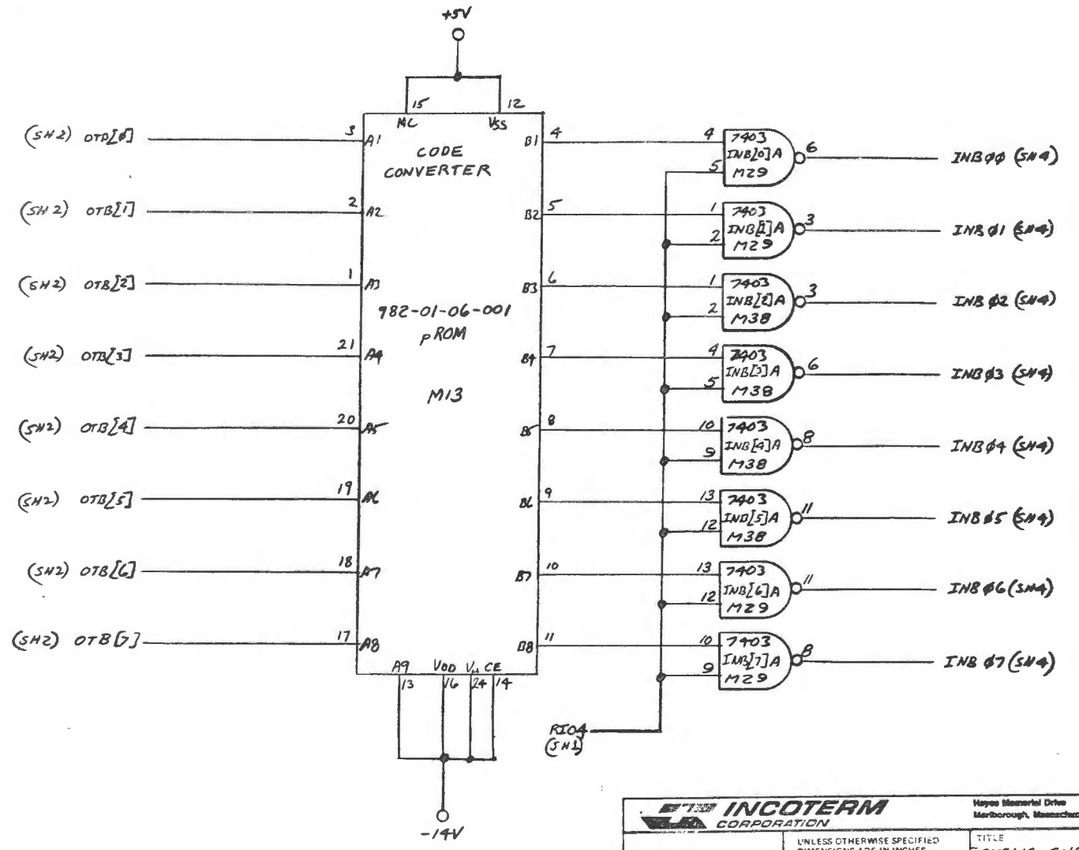
DR R. A. HILL
CHK
ENG
APPD
NEXT ASSY

TITLE: CYCLIC CHECK, CODE CONV., BUFFER LOGIC DIAGRAM-001

SIZE	P.C.	S.S.	NO.	REV
D	010-38-01			A

SCALE
SHT 2 OF 9





"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

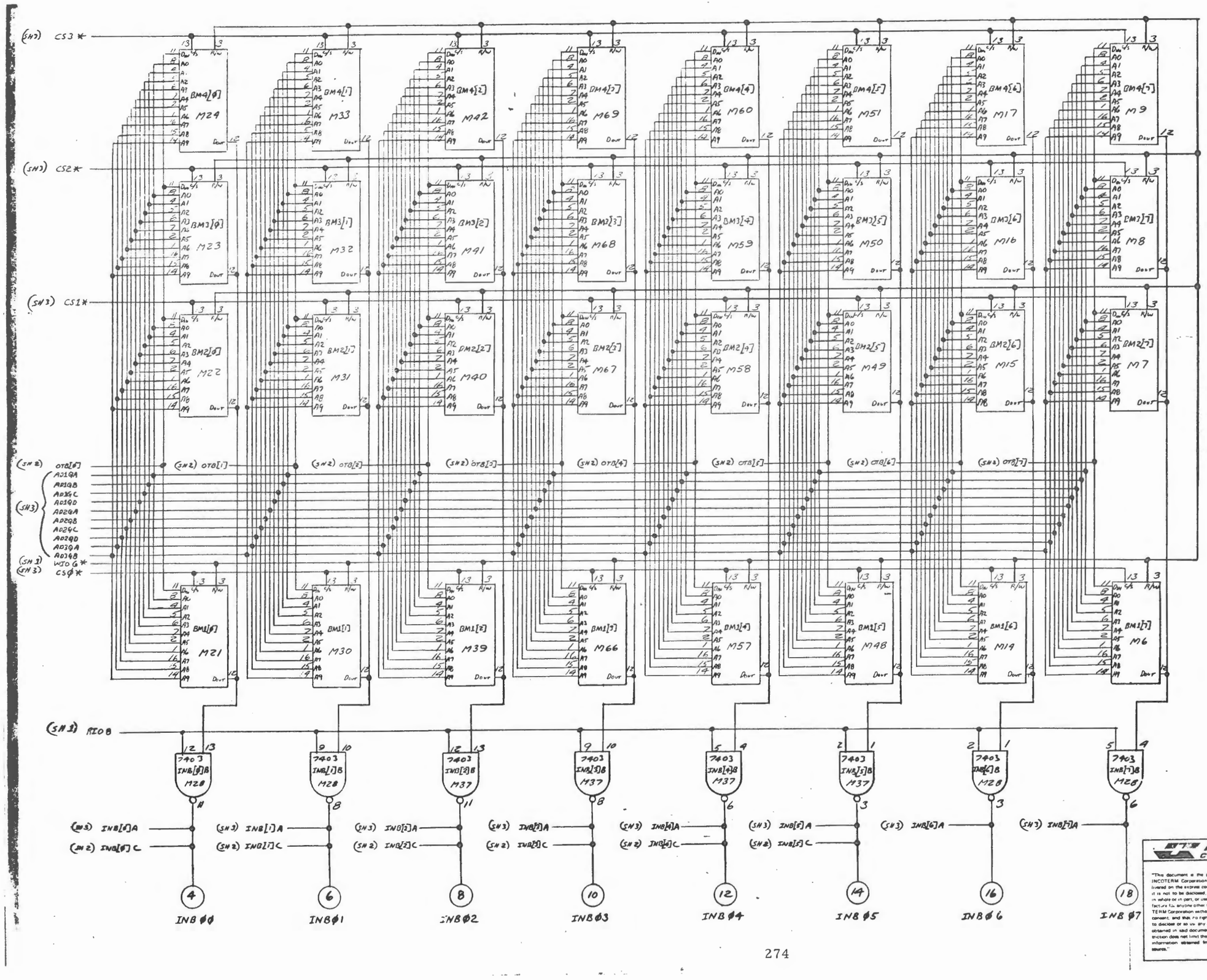
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

TITLE: CYCLIC CHECK, CODE CONV., BUFFER, LOGIC DIAGRAM-001

		DATE
DR	R.A. HILL	
CHK		
ENG		
APPD		
NEXT ASSY		

SIZE	P.C.	S.S.	NO.	REV
D	010-38-01			A

SCALE — SHT 3 OF 4



NOTE

IC's M6 THRU M9, M14 THRU M17,
M48 " M51, M57 " M60,
M66 " M69, M39 " M42,
M30 " M33, M21 " M24
ARE RAM's PER SPECIFICATION
NUMBER 982-01-07-001.

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture by anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained on said document. This restriction does not limit the right to use information obtained from another source."

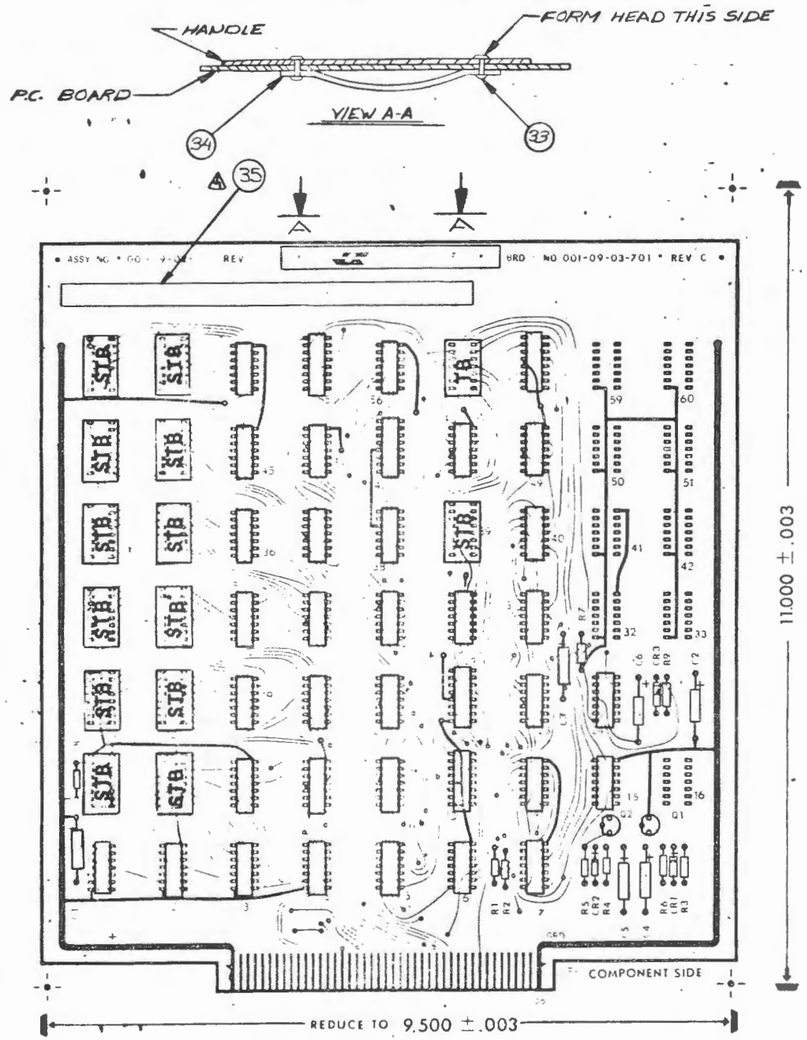
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

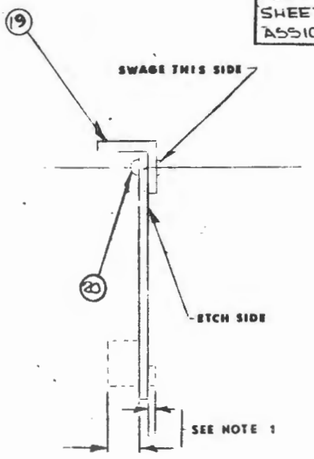
TITLE: CYCLIC CHECK, CODE CONV., BUFFER LOGIC DIAGRAM-001

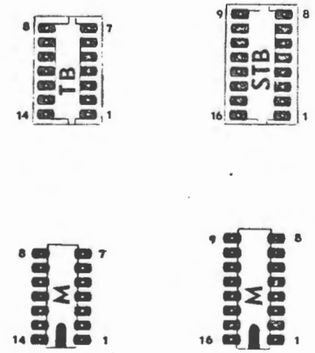
DR R.A. HILL	DATE	SIZE	P.C.	S.S.	NO.	REV
CHK		D	010-3B-01			A
ENG						
APPD						
NEXT ASSY		SCALE		SHT 4 OF 9		

REVISION HISTORY				
REVISION		DESCRIPTION	DATE	CHK
D		REVISED/REDRAWN ECO 1953	2/24/72	
	J1	ECO 1976	8/3/72	

CHANGES THIS DOCUMENT STRUCTURE PER PROCEDURE 300-002 SEE SHEET 1 FOR CONTINUING REVISION ASSIGNMENT HISTORY







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
31	R9
30	C4,5,6
29	M24
23	TB57 39,43,44,52,53
22	STB8,9,17,18,25,26,34,35
21	
20	
19	
18	Q1,Q2
17	CR1,2,3
16	R7
15	
14	R3,R4
13	R1,2,5,6,8
12	
11	C1,C2,C3
10	M31
9	M38
8	M13,22,47,55,58
7	M7,19,27,36,45,54
6	M30
5	M6,15,21,23,48,56
4	M11,14,20,28,29,37
3	M1,2,3,5,10
2	M4,12,40,49
1	M46

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.

△ ASSY WITH ARTWORK 001-09-03-701 REV C

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

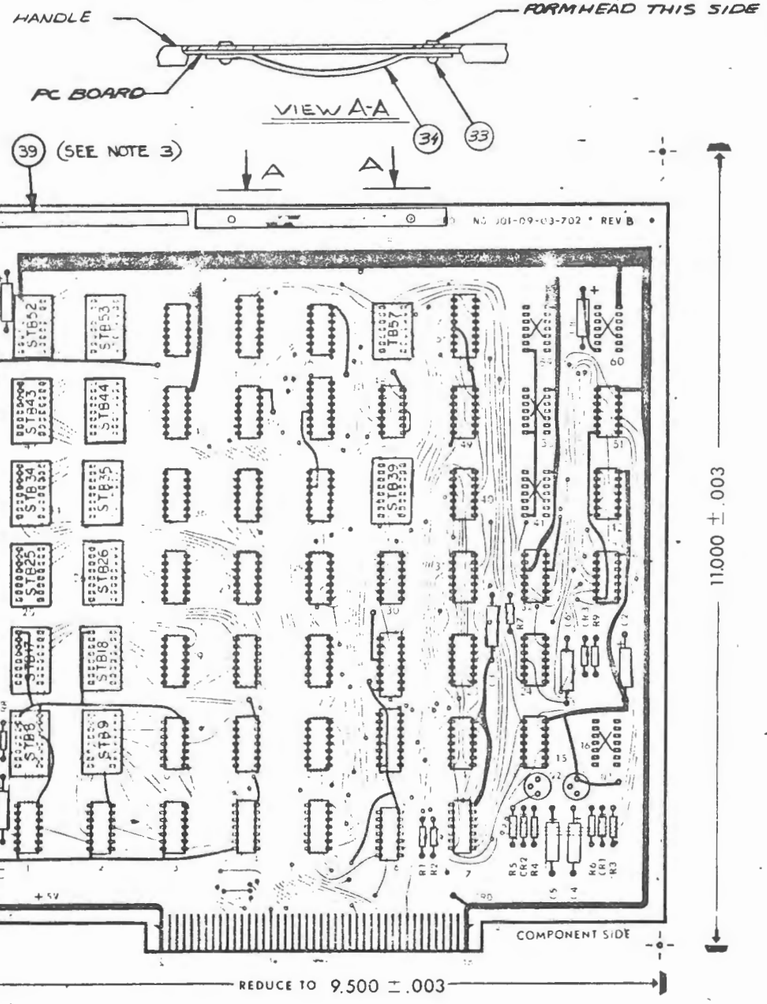
DR F. FREDERICKS 7/13/70
CH R. BIRONEAU 7/14/70
EN P. LABLONDEAU 7/14/70
APP L. BERGENS 7/20/70

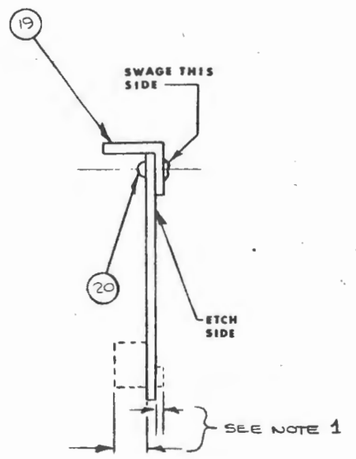
TITLE: P.C. BOARD ASSY BOOT CONTROLLER 701

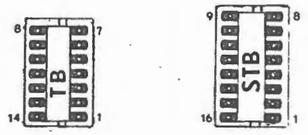
SIZE	P.C. NO.	REV
D	001-09-02	J4

NEXT ASSY 001-09-06 SCALE 1:1 WT. 3 SHT 3

REVISION	DESCRIPTION	DATE	CHK







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
	-
31	R9
30	C4,5,6
29	M24
28	
27	
26	
25	
24	
23	TB57
22	STB1,11,19,21,[illegible]
21	
20	
19	
18	Q1 Q2
17	CR1,2,3
16	R7
15	
14	R3,4
13	R1,2,5,6,8
12	M42
11	C1,2,3,7,8
10	M31
9	M32,38
8	M13,22,47,55,58
7	M7,19,27,36,45,54
6	M30
5	M6,15,21,23,48,51,56
4	M11,14,20,28,29,37
3	M1,2,3,5,10
2	M4,12,40,49
1	M33,46

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. X INDICATES NO COMPONENT MOUNTED AT THIS LOCATION.
3. LOCATE IN APPROXIMATE AREA SHOWN REVISION STATUS LABEL ITEM 39 AND MARK ASSY. NO. 001-09-02-702 AND LATEST ASSY. REVISION.

(ASSY WITH ARTWORK 001-09-02-702 REV B)

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES ±2

		DATE
DR	[illegible]	4/13/77
CHK	[illegible]	4/13/77
ENG	[illegible]	4/13/77
APPD	[illegible]	4/13/77

NEXT ASSY [illegible]

TITLE
P.C. BOARD ASSY
BOOT CONTROLLER
702

SIZE	P C	S S	NO	REV
D	001-09-02			C1

SCALE 1:1 SHT 6 OF 6

REVISIONS			
REV.	DESCRIPTION	CHK	APPD

BOOT CONTROLLER 001

Steve Fournier 12-M-78

D 001-09-01 E1

2 OF 3

277

REVISIONS
REV DESCRIPTION CHK APPD

M 11-4 BCDI 00 (SH2) 1
M 11-6 BCI 00 (SH2) 2
M20-2 BCDI 01 (SH2) 15
M20-4 BCI 01 (SH2) 14
M20-12 BCDI 02 (SH2) 3
M20-10 BCI 02 (SH2) 4
M20-8 BCDI 03 (SH2) 16
M20-6 BCI 03 (SH2) 13
9
GEN TB STB 53
8 7 6 5

M37-12 BCDI 04 (SH2) 19
M37-10 BCI 04 (SH2) 20
M28-2 BCDI 05 (SH2) 29
M28-4 BCI 05 (SH2) 17
M28-8 BCDI 06 (SH2) 30
M28-6 BCI 06 (SH2) 18
M28-12 BCDI 07 (SH2) 32
M28-10 BCI 07 (SH2) 31
25,26,27,28
GEN TB STB 52
24 23 22 21

7402 GENDET M40
7402 ADDI/GEN M40
ADDI/GENCL (sh2) M12-3
ADDI/GENRE (sh2) M23-4
M31 7404
ADIDETI
ADIDETG (sh2) M36-8
GENDETI
7430 GENERR M54
GENERRI
BOLOD M21-8 (sh2)
7410 ERRDET M23
7410 ENTBOO M23
ADD2DETG (SH2) M19-8
M15 7410
ENTBOOI
BOOTARES (sh2) M15-11
BOOTACL (sh2) M12-6

(19) TYPOO
ADDXX M4-2
7402 CIODET M4
M11 7404
CIODETI
CPIBC (sh2) M29-10
7402 CIOBOOT M12
BOOT ACL M12-4 SHT 2
M12 ENT BOOT 7407
BOLOO (sh2) M21-10
(84)

(21) TYPOI
TYPOII
(28) ADDXX
CIODET M4-B
ADDXXI M14-11
(22) FUNCOI
(24) FUNCO2
7402 RIODET M4
RIOI
7402 AIOADDI M4
7402 RIOADD2 M4
+5V
A8 1K
STB-8 ADDTB-A
25
STB 9 ADDTB-B
ADD104
ADD204
ADD105
ADD106
ADD206
ADD107
ADD207
ADD205

7403 ADD100 M1
7403 ADD200 M1
7403 ADD101 M1
7403 ADD201 M1
7403 ADD102 M2
7403 ADD202 M2
7403 ADD103 M2
7403 ADD203 M2
(4) INB00
(6) INB01
(8) INB02
(10) INB03

ADDTB-B STB 9-2
ADDTB-B STB 9-1
ADDTB-B STB 9-3
ADDTB-B STB 9-4
ADDTB-B STB 9-6
ADDTB-B STB 9-5
ADDTB-B STB 9-7
ADDTB-B STB 9-8
7403 ADD104 M3
7403 ADD204 M3
7403 ADD105 M3
7403 ADD205 M3
7403 ADD106 M10
7403 ADD206 M10
7403 ADD107 M10
7403 ADD207 M10
(12) INB04
(14) INB05
(16) INB06
(18) INB07

ADDXX M4-2
M14 7404
ADDXXI
7410 TIOADD M6
DAFF* M58-10 (SH2)
7410 ENACK M6
7403 ACKOUT M5
ACK
L= ACKNOWLEDGE
(27)

BOOT CONTROLLER
001
S.L. FRANKEL 12/21-70
D 001-09-01 E1
3 3

REVISIONS			
REV	DESCRIPTION	CHK	APPD

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XXX ±(3PLCS) .XX ±(2PLCS)
ANGLES ± 2°

DR. Rene FOURNIER DATE 12-19-79
CHK
ENG
APPD
MFG ASSY

TITLE
BOOT CONTROLLER 002

SIZE D | FSCM NO 001-09-01 | REV C

SCALE — SHT 2 OF 4

REVISIONS			
REV	DESCRIPTION	CHK	APPD

M11-4 BCDI00 (SH2) 1
M11-6 BCI00 (SH2) 2
M20-2 BCDI01 (SH2) 15
M20-4 BCI01 (SH2) 14
M20-12 BCDI02 (SH2) 3
M20-10 BCI02 (SH2) 4
M20-8 BCDI03 (SH2) 16
M20-6 BCI03 (SH2) 17
GEN TB STB53

M37-12 BCDI04 (SH2) 19
M37-10 BCI04 (SH2) 20
M28-2 BCDI05 (SH2) 29
M28-4 BCI05 (SH2) 17
M28-8 BCDI06 (SH2) 30
M28-6 BCI06 (SH2) 18
M28-12 BCDI07 (SH2) 32
M28-10 BCI07 (SH2) 31
25,26,27,28
GEN TB STB52

7402 GENDET M40
7402 ADDI/GEN M40
ADDI/GENCL (sh2) M12-3
ADDI/GENRE (sh2) M23-4
M31 7404
ADIDETG (sh2) M 36-8
ADIDETI
GENDETI
7430 GENERR M54
GENERRI
BOOTIME M33-8 SHT4
7410 ERRDET M23
ADD2DETG (SH2) M19-8
7410 ENTBOO M23
M15 7410
BOOTARES (sh2) M15-11
BOOTACL (sh2) M12-6
ENTBOOI

19 TYPOO
ADDXX M4-2
7402 CIODET M4
CIOEN M51-1
CIODIS M51-3
CIOBOOT M51-9
} SHT 4

21 TYPOI
TYPOII
28 ADDXX
CIODET M4-8
ADDXXI M14-11 (B1)
22 FUNCOI
24 FUNCO2
7402 RIODET M4
7404 M11
RIOI
7402 RIOADDI M4
7402 RIOADD2 M4

+5V
A8 1K
STB-8 ADDTB-A
21 22 23 24

STB9 ADDTB-B
ADD104
ADD204
ADD105
ADD206
ADD107
ADD207

7410 TIOADD M6
ADDXX M4-2
ADDXXI M14-11 (B1)
DAFF* M58-10 (SH2)
7410 ENACK M6
7403 ACGOUT M5
8 ACK
L= ACKNOWLEDGE
27

7403 ADDIRO M1
7403 ADD200 M1
7403 ADD101 M1
7403 ADD201 M1
7403 ADD102 M2
7403 ADD202 M2
7403 ADD103 M2
7403 ADD203 M2
4 INBOO
6 INBOI
8 INBO2
10 INBO3

ADDTB-B STB9-2
ADDTB-B STB9-1
ADDTB-B STB9-3
ADDTB-B STB9-4
ADDTB-B STB9-6
ADDTB-B STB9-5
ADDTB-B STB9-7
ADDTB-B STB9-8

7403 ADD104 M3
7403 ADD204 M3
7403 ADD105 M3
7403 ADD205 M3
7403 ADD106 M10
7403 ADD206 M10
7403 ADD107 M10
7403 ADD207 M10
12 INBO4
14 INBO5
16 INBO6
18 INBO7

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used to make or have made, or sold (whether directly or indirectly) without the written consent and that no right is granted to obtain or disclose information contained in this document. The information does not grant the right to use information obtained from another source."

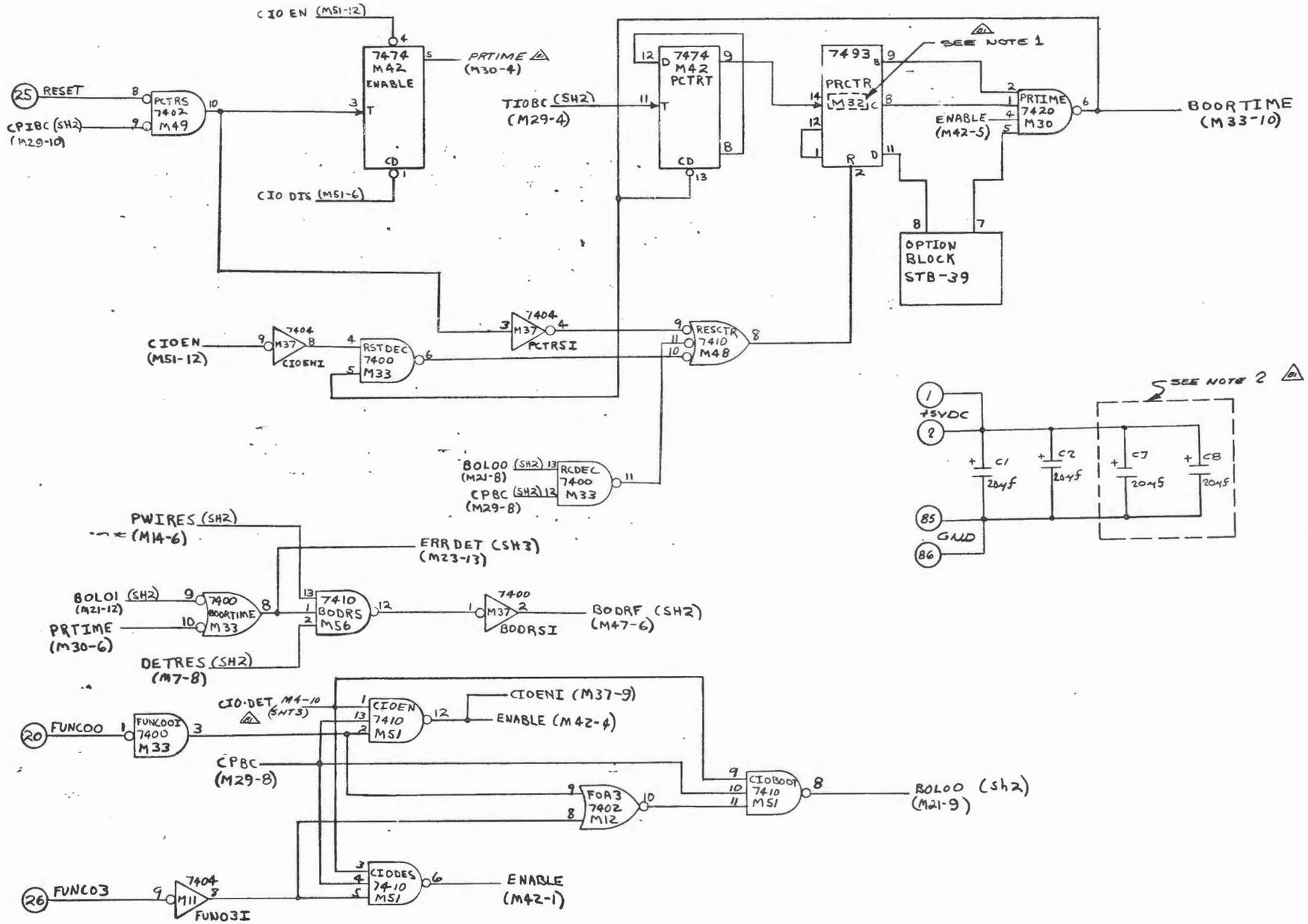
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (.13PLCS)
.02 (.12PLCS)
ANGLES 2°

TITLE 002
BOOT CONTROLLER

DRN S. Fenner DATE 11/14/74
ENG
APPD
NEXT ASSY

SIZE D | FSCM NO. 001-09-01 | REV C
SCALE | SHT 3 OF 4

REVISIONS			
REV	DESCRIPTION	CHK	APPD



NOTES:

1. ASSEMBLYS USING BOARD NO. 001-09-03-701 REV. B IC DESIGNATION SHALL BE MIG
2. ASSEMBLYS USING BRD NO. 001-09-03-701 REV. B C7 & C8 ARE NOT USED

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

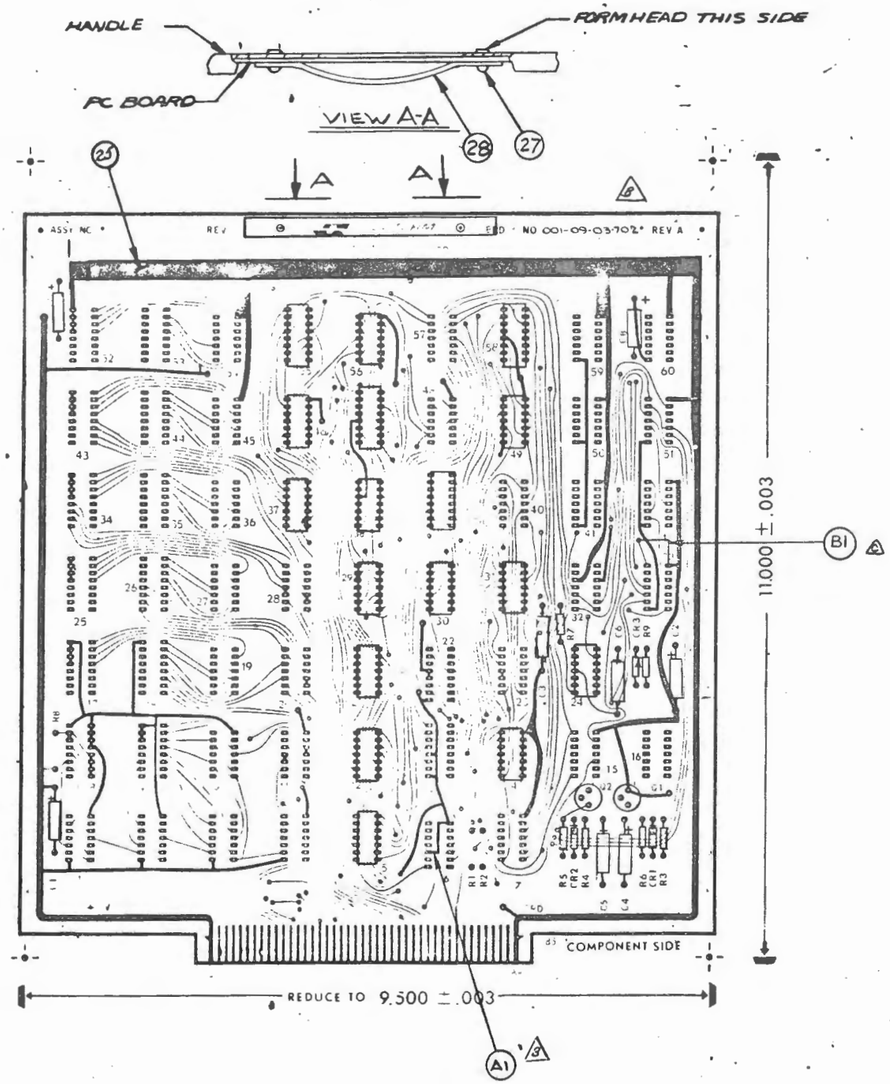
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XXX (.X) (CSI) .XX (2PL) (CSI)
ANGLES ±°

DR S FOURNIER 11-12-71
CHK
ENG
APPD
NEXT ASSY

TITLE: BOOT CONTROLLER
002
SIZE D | FSCM NO 001-09-01 | REV C
SCALE | WT | SHT 4 OF 4

REVISION HISTORY			
REVISION	DESCRIPTION	DATE	CHK

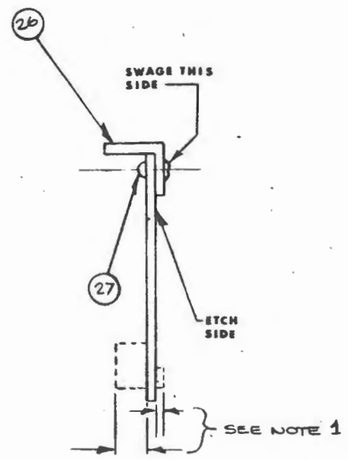
B	ADD JUMPER WIRE ITEM 29
A1	MG PIN 7 TO MG PIN 12
B1	M33 PIN 8 TO EYELET

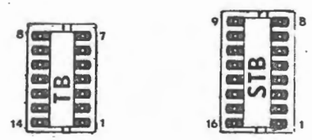


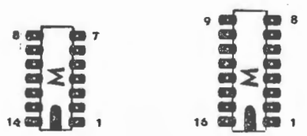
REFERENCE DESIGNATION	
31	
30	
29	
28	
27	
26	
25	
24	
23	
22	
21	
20	STB39
19	
18	Q1, Q2
17	CR1, CR2, CR3
16	C4, C5, C6
15	C1, C2, C3, C7, C8
14	R3, R4
13	R9
12	R7
11	R5, R6
10	M24
9	M31
8	M38
7	M47, M53, M58
6	M30
5	M21, M56
4	M14, M29, M37
3	M5
2	M12, M49
1	M46

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. X INDICATES NO COMPONENT MOUNTED AT THIS LOCATION.







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

(ASSY WITH ARTWORK 001-09-03-702 REV A)

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is loaned on the express terms that it is not to be duplicated, nor shown to anyone other than INCOTERM Corporation without written consent and that it will be returned to the owner on demand. Any information disclosed hereon is not to be used in whole or in part for manufacture for

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE # & DATE	CHK	APPD
A		RELEASED	[illegible]	[illegible]
	A1	REVISED/ECO 2094 11/14/72	[illegible]	[illegible]
	A2	REDRAWN/ECO 3060	[illegible]	[illegible]

+5V
CR1 IN4148
CR2 IN4148
R3 39K
R6 1K
R5 1K
R4 39K
C4 25µf
C5 25µf
Q1 2N5088
Q2 2N5088
R9 27K
C6 25µf
CR3 IN4148
ASID
M14 7404
M24 9601 TIM05
R7 5.6K
C3 20µf
PWRES
M31 74L04
PWIRES
M14 7404
CPIBC
M29 7404
CPBC
M29 7404
M58 7476 SPLIT
PHBCG
M49 7402
PHACG
M49 7402
(34) CPT02N
BOLOO
M21 7410
BOLOI
M21 7410
(57) FIND SYNC
BOGOUT
M5 7403
(29) BOOT
BOPWR
M56 7410
BOPIR
M49 7402
M46 7400
BODRES
M47 7476
BODRF
DBCG
M48 7410
TOIBC
M29 7404
M47 7476 TOTEF
M38 7493 TIDIV
STB39 TIME
TOTCG
M30 7420
TOITC
M37 7404
M55 7476 TIME
TORG
M56 7410
TOIG
M29 7404
(61) XMIT MODE

NOTE:
THE FOLLOWING I/O PINS ARE PREASSIGNED AND MUST BE USED FOR THE FUNCTIONS DESCRIBED:
A. +5V — PINS 1 & 2.
B. GND — PINS 85 & 86.
C. +12V — PINS 75 & 76.
D. −13V — PINS 81 & 82.
E. I/O BUSS — PINS 3 THRU 37.

THIS LOGIC IS TO BE USED WITH BOARDS ASSEMBLED USING ARTWORK 001-09-03-701 REV.B

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and it is not to be given to a third party. The receipt or possession of this document does not convey any rights to manufacture, or to reproduce, or to have reproduced, any item or any part thereof, without the written permission of INCOTERM Corporation. The receipt or possession of this document does not convey any rights to disclose or to use any information contained in it, or to use any information or data hereof for any purpose other than that for which it is specifically furnished, nor does it convey any rights to use any information or data contained in it for any purpose except upon the written agreement between the recipient and INCOTERM Corporation. The receipt or possession of this document does not convey any rights to manufacture, or to have manufactured, any item or any part thereof, except upon the written agreement between the recipient and INCOTERM Corporation. The receipt or possession of this document does not limit the right to use information obtained from another source.

DRAWN	Jim MacKenzie 1-19-74
CHECKED	[illegible] 2-15-74
ENGINEER	[illegible] 2-15-74
APPD	[illegible] 2-15-74
FIRST USED ON	

LOGIC DIAGRAM TRANSMIT TIMER BOARD -001

SIZE	DOCUMENT NUMBER	REV
D	010-30-01	A2

SCALE [illegible] SHT 1 OF 1

REVISION HISTORY				
REV		DESCRIPTION	BY	DATE
A		RELEASED	RW	7/2
	A1	REVISED ECO 2034 10/19/72	JC	3/0
	A2	REDRAWN/ECO 3060	f	f

+5V
R9 27K
CR3 IN4148
C6 25µf
M24 TIMER 9601
Q
M14 7404
R3 39K
R6 1K
R5 1K
R4 39K
CR1 IN4148
CR2 IN4148
C5 25µf
C4 25µf
Q1 2N5088
Q2 2N5088
ASID
M29 7404
M47 7476 TOTEF
M38 7493 TIDIV
STB39 TIME
M30 7420
TOTCG
M37 7404
TOITC
PHACG
M55 7476 TIME
XMIT MODE (81)
M56 7410
TORG
M29 7404
TOIG
CPTO2N (34)
M29 7404 CPIBC
M29 7404 CPBC
M58 7476 C SPLIT
M49 7402
PHECG
PHACG
TIME (M55-6)
M46 7400
BODRES
R7 5.6K
C3 20µf
+5V
M31 74LO4 PWRES
M14 7404
BOOTACL
M12 7402
ENTBOOT
M12 7402
84
M47 7476 BODRF
BODRS
M56 7410
BODRSI
M37 7404
BOLDO
M21 7410
BOGOUT
M5 7403
BOOT
29
EBIDET
M29 7404
EBGBO2
M21 7410
BOLDI
M21 7410
57
FIND SYNC

NOTE:
THE FOLLOWING I/O PINS ARE PREASSIGNED AND MUST BE USED FOR THE FUNCTIONS DESCRIBED:
A. +5V — PINS 1 & 2.
B. GND — PINS 85 & 86.
C. +12V — PINS 75 & 76.
D. −13V — PINS 81 & 82.
E. I/O BUSS — PINS 3 THRU 37.

THIS LOGIC IS TO BE USED WITH BOARDS ASSEMBLED USING ARTWORK 001-09-03-702 REVA

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

TITLE: LOGIC DIAGRAM TRANSMIT TIMER BOARD -002

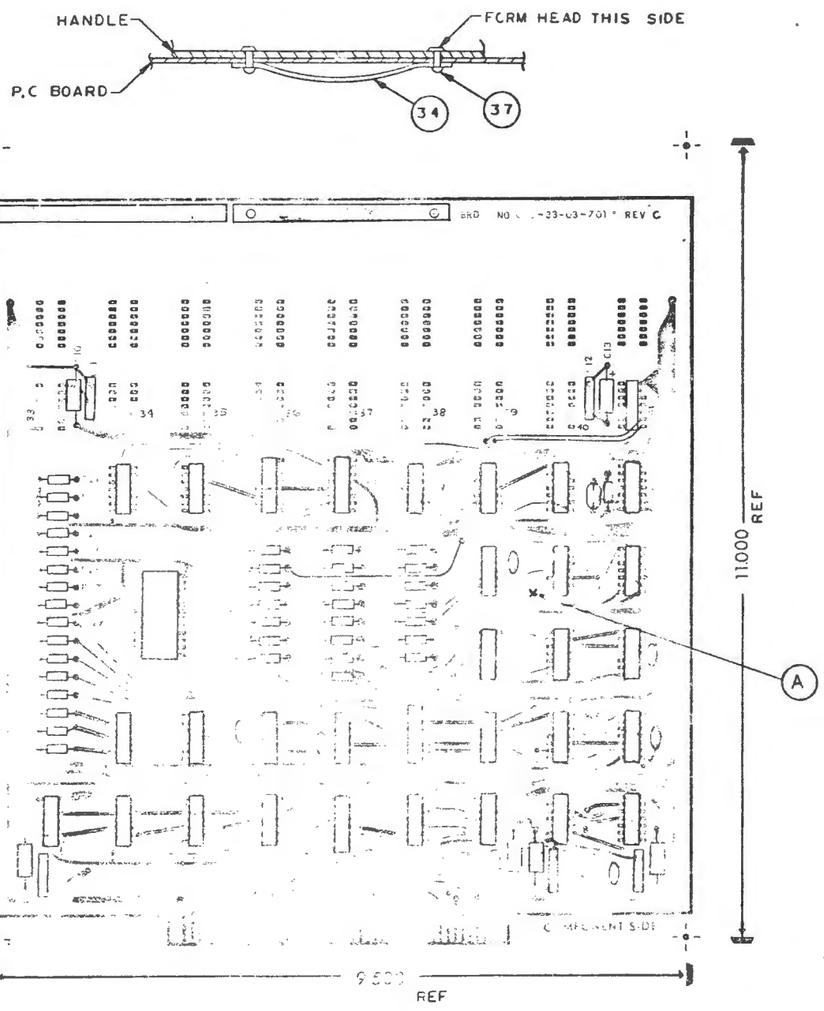
DRAWN	DATE
Jim McKenzie	2-22-74
CHECKED	3-28-74
APPROVED	3-6-74
RELEASED	4/16/74

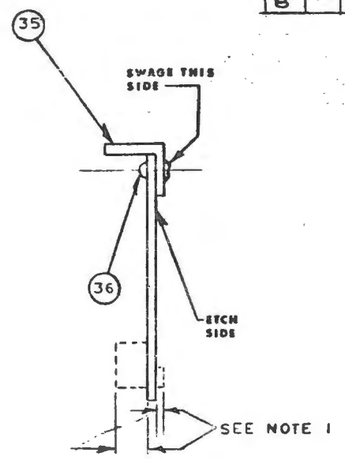
SIZE D | DOCUMENT NUMBER 010-30-01 | REV A2

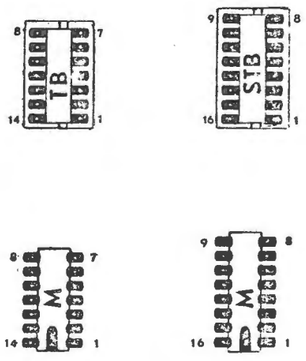
CAGE | SHT 1 OF 1

REVISION HISTORY				
REVISION		DESCRIPTION RD#552	DATE	CHK
A		RELEASE		
	A1	REV. CHANGE ONLY/ECO 2378		
	A2	REV. CHANGE ONLY/ECO 2515		
B		REV/ECO 3869 2-6-79		

ITEM NO.	REFERENCE DESIGNATION
29	
28	C14—19
27	C9
26	C2, 3, 6, 7, 11, 12
25	C4, 5
24	C1, 8, 10, 13
23	R20
22	R29-36
21	R21-28
20	R19
19	R1-R3, 5, 18, 37, 38
18	R4
17	R6-R9, 10-17, 39
16	
15	
14	M18
13	M32
12	
11	M14
10	M27, 28
9	M8, 9, 12, 16, 22, 31
8	M5
7	M24
6	M25, 26
5	M29, 30
4	M6, 10, 11, 21
3	M1, 2, 3, 4, 19
2	M7, 13, 20, 41
1	M15, 17, 33







PIN NUMBERING AND ORIENTATION

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 38, AND MARK ASSY. NO. 010-33-02-701C AND LATEST ASSY. REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-33-03-701 REV. C

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DR [illegible] DATE 7-2
CHK [illegible] DATE 7-2
ENG
APPD

NEXT ASSY 010-33-02-701

TITLE
P.C. BOARD ASSY
CARD READER CONTROLLER 701C

SIZE	P.C.	S.S.	NO.	REV
D	010-33-02			B

SCALE 1:1 SHT 1 OF 1

REV	DESCRIPTION RD#552	CHK	APPD
A	RELEASED		
B	REV/ECO 3869 6-6-75		

(L) ADDXX 28 — (L) TYP00 19 — (L) TYP01 21 — INS2 M5 7442 — CP02L — CIOTR 7402 M13 — TIOH 7404 M6 — TACK

FNH2 — FNL2 7404 M21 — RDST 7402 M13 — S/INB04 S/INB03 S/INB02 S/INB01 S/INB00 (SH2) RSACK

FNL1 — RDAT 7402 M13 — RDATL 7404 M21 — RIOB0 (SH2) — FINT

(SH2) BOOTF — BORD 7400 M23 — CIORD 7400 M15 — CLRH

TIO1 — (L) FNC0 0 20 — FNH1 7404 M11 — FNL1 7404 M6 — RDAT

TIO2 — FNL2 — (L) FNC0 1 22 — FNH2 7404 M11

TIO4 — (L) FNC0 2 24 — FNH4 7404 M11

CIOTR — RICT2 — (H) CPT02N 34 — CP02L 7404 M6 — RESETH 7402 M7 — RESETL 7404 M6 — (L) IOR 25

CLRH 7400 M15 — CIORD — CLRL 7404 M6 — EOF (SH2) — OVRUN

(H) CPT09N 36 — CP09L 7404 M24 — RF — RCF (SH2)

(L) FEEDCK 53 — R1 560Ω — C14 5000pF — +5V — R2 560Ω — C15 5000pF — (L) DATSTB 52

FCF 7474 M5 — FORC (SH2) — S/INB04 (SH2)

ENDBOOT (SH2) — DSF1 7474 M9 — DSF2 7474 M9

+5V — R3 560Ω — (L) BUSY 62 — C16 5000pF — BSYD 7400 M17

(SH2) BOOTF* — BF 7474 M8 — DAVL — EOCL

(SH2) FORCI — (SH2) BOOTF* — FRDY 7474 M16 — RDY 7400 M15 — DRS 7400 M17 — DRDY 7474 M8

CPU2L — RICT2 7402 M7 — RIOB0L (SH2) — RRDY 7402 M7

(L) READY 66 — C17 5000pF — +5V — R4 560Ω — RF 7474 M22 — CP09L

UNMASK C7476 M14 — J K R S Q — UNRDY 7400 M15

PKCM 7400 M17 — PICK 7437 M24 — 63 PICK

RDF 7476 M14 — CLRH

SELIN 31 — SELINH 7404 M21 — SELOUT 7400 M17 — 32 SELOUT

INFS 7404 M21 — M16 INF 7474 — INT 7402 M20 — 30 INT

FINT 7402 M20 — RDATL

EOV 7400 M23 — (SH2) EOV* — CLRL

M31 OVRUN 7474 — S/INB01 (SH2)

(SH2) FORC — BF — DAVL 7420 M30 — EOF* — TIO1 7403 M19 — FNH1

SACT 7402 M20 — TIO2 7403 M19 — FNH2

TIO4 7403 M19 — R39 1K — +5V

RDACK 7403 M4 — (SH2) RIOB0 — RSACK 7403 M4 — RDST — TACK 7403 M4 — TIOH — 27 ACK

ENTB0 (SH2) — EOCL 7400 M23 — BF*

+5V — GND — -14V — +14V

C1 5uf 12V — C2 .1uf — C3 .1uf — C4 5uf 25V — C5 5uf 12V — C6 .1uf — C7 — C10 .1uf — C11 .1uf — C12 .1uf — C13 5uf 12V

43 65 85 84 86 — 1 2 — 75 76 — 81 82

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that any right in any invention disclosed herein exists by law or does not exist is the right to use information obtained from another source."

INCOTERM CORPORATION — Mayo Memorial Drive, Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS .005 (2PLCS) .02 (2PLCS) ANGLES 2°

TITLE: CARD READER CONTROLLER 001

DR — DATE — CHK — ENG — APPD

SIZE D | F.C. 010-33-01 | SH. NO. | REV B

NEXT ASSY 010-33-02 101 — SCALE — SHT 1 OF 2

CRD12 (39)
CRD11 (46)
ENDBOOT (41)
CRD00 (41)
CRD09 (51)
CRD08 (77)
CRD07 (68)
CRD06 (70)
CRD05 (58)
CRD04 (73)
CRD03 (71)
CRD02 (72)
CRD01 (60)
R6 1K
R7 1K
R8 1K
R9 1K
R10 1K DSF1A
R11 1K
R12 1K
R13 1K
R14 1K
R15 1K
R16 1K
R17 1K
+5V
DBC7 M27 7475
DB06
DB05
DB04
DBC3
DB02
DBC1
DB00
M28 7475
RIN7 M26
RIN6 M26
RIN5 M26
RIN4 M26
RIN3 M25
RIN2 M25
RIN1 M25
RIN0 M25
R21 4.7K
R22 4.7K
R23 4.7K
R24 4.7K
R25 4.7K
R26 4.7K
R27 4.7K
R28 4.7K
+14V
ROM M18
MM5230 BO
A8 A7 A6 A5 A4 A3 A2 A1 A9
MC
GND EN3 VBB
-14V
DAT07 M11
DAT06 M11
DAT05 M10
DAT04 M10
DAT03 M10
DAT02 M10
DAT01 M10
DAT00 M10
R29 6.8K
R30 6.8K
R31 6.8K
R32 6.8K
R33 6.8K
R34 6.8K
R35 6.8K
R36 6.8K
D/INB07 M4 7403
D/INB06 M3 7403
D/INB05 M3 7403
D/INB04 M3 7403
D/INB03 M2 7403
D/INB02 M2 7403
D/INB01 M1 7403
D/INB00 M1 7403
S/INB04 M3 7403
S/INB03 M2 7403
S/INB02 M2 7403
S/INB01 M1 7403
S/INB00 M1 7403
(SHI) FCF
RCF
(SHI) OVRUN
(SHI) RDST
18 INB07
16 INB06
14 INB05
12 INB04
10 INB03
8 INB02
6 INB01
4 INB00
DEC4 M30 7420
DEC2 M29 7420
DEC1 M29 7420
EOFS M20 7402
EOF M31 7474
DSF1A M24 7437
DB4-7
DAVL (SHI)
EOV (SHI)
CLRL (SHT I)
R4 12K
C9 22pf
DSPLY 9601 M32
DSF1B (SHT I)
R18 560Ω
C19 .1000pf
ENTBOOT (64)
EB M21
ENTBO M23 7400
RF (SHI)
BOOTF M22 7474
BOOT M19 7403
29 BOOT
BORD
BF (SHI)
ERDY (SHI)
M41 ENDBOOT 7402
CRD00
(SHI) DSF1
RIOBO M2A 7437
RDATL (SHI)
470Ω R19
R20 120Ω
RIOBOL M6
RICTE (SHI)
RDACK (SHI)
(L) HOPCK 42
HOPCKM M11
R37 660Ω
R38 560Ω
(L) READCK 67
C18 5000pf
CP09L (SHT I)
S/INB03
FORC M13 7402
FORCI M21
ERDY (SHI)
DAVL (SHI)
(SHI) FCF

"This document is the property of INCOTERM Corporation and is furnished on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right in any such information is conveyed by the possession hereof. INCOTERM Corporation reserves the right to use information obtained from another source."

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

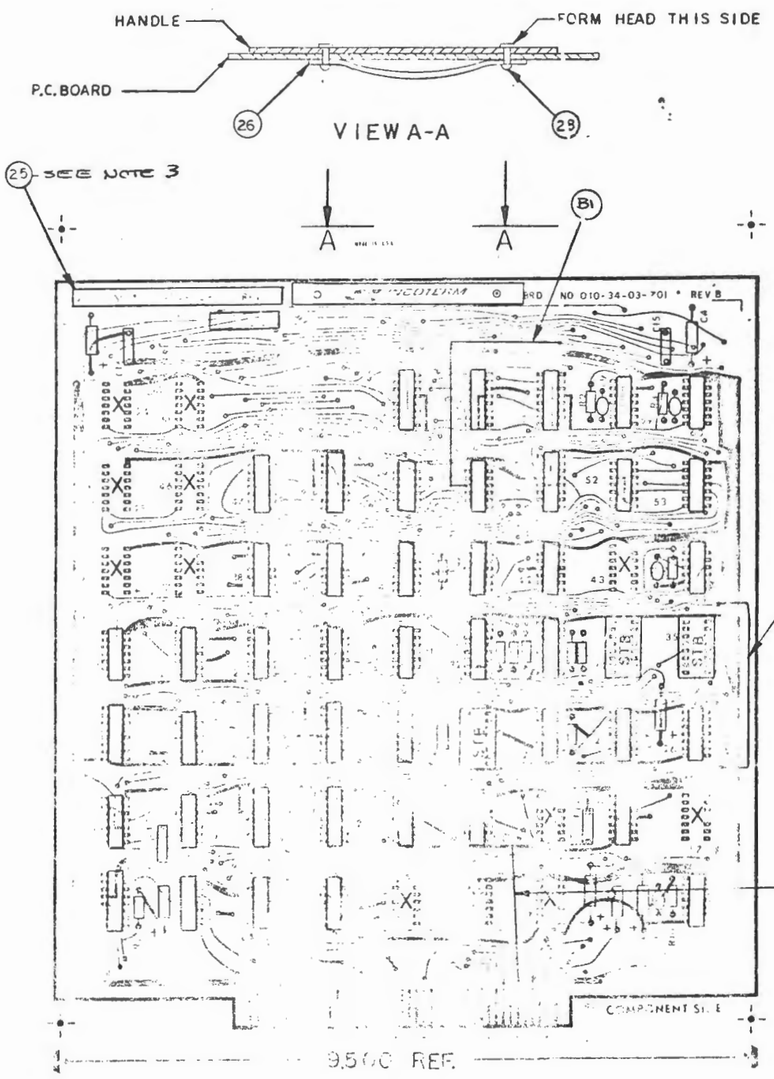
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .03 (2PLCS)
ANGLES 2°

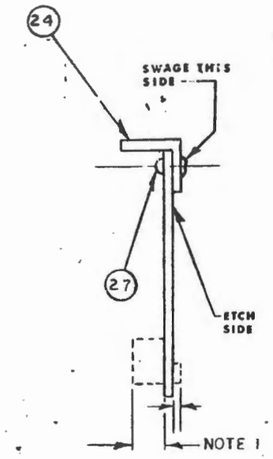
TITLE: CARD READER CONTROLLER 001

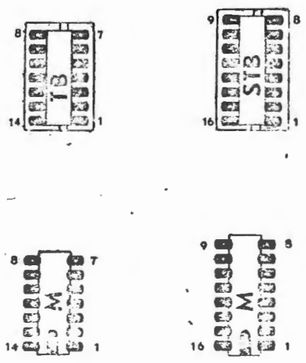
DR	DATE	SIZE	P.C.	S.S.	NO.	REV
CHK		D	010-33-01			B
ENG						
APPD						
MFR'T ASSY		SCALE X		SHT 2 OF 2		

ADD JUMPER WIRE ITEM 36		
WIRE	FROM	TO
A1	EYELET	EYELET
B1	MSC-11	EYELET
C1	+14 VOLT BUS	EYELET

REVISION HISTORY				
REVISION		DESCRIPTION RD#537	DATE	CHK
A		RELEASED 10/27/72		
B		SCD/ECO 2188		
C		RELEASED/ECO 2221		
	C1	REVISED/ECO 2246		
	C2	REV CHANGE ONLY/ECO 2279		
	C3	REV. CHANGE ONLY/ECO 2378		
	C4	REV. CHANGE ONLY/ECO 2477		







PIN NUMBERING AND ORIENTATION

ITEM NO	REFERENCE DESIGNATION
35	D32,33
34	M13,14,16,22,24,25,26
33	CR1
25	
24	
23	
22	C13-C16
21	C1-C4
20	C5-C8
19	C9-C12
18	R2,5,8,10
17	R4
16	R1
15	R6,7,8,11,12
14	QTB23,34,35,
13	
12	
11	M3,44,59,60
10	M47,48,57,58
9	M11,12,20,21,51,56
8	M29
7	M1,18
6	M2,3,4,27,28,31,39,42
5	M40,41
4	M9,50,53
3	M10,30,43,52
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. PATTERN MARKED "X" NOT USED.
3. LOCATE IN APPROXIMATE AREA SHOWN REV. LABEL, ITEM 25 AND MARK ASSY. NO. 010-34-02-7018 AND LATEST ASSY REV.

ITEM	PART NO	DESCRIPTION	QTY
37	MC GLUE	HOT MELT GLUE	0
36	945-02-02-001	WIRE #24 GA SOLID	0

COMPONENT SIDE

REV. B

ASSEMBLE WITH ARTWORK 0103403-701

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2

DR [illegible] DATE
CH [illegible] DATE 10/26/72
ENG [illegible] DATE
APP'D [illegible] DATE

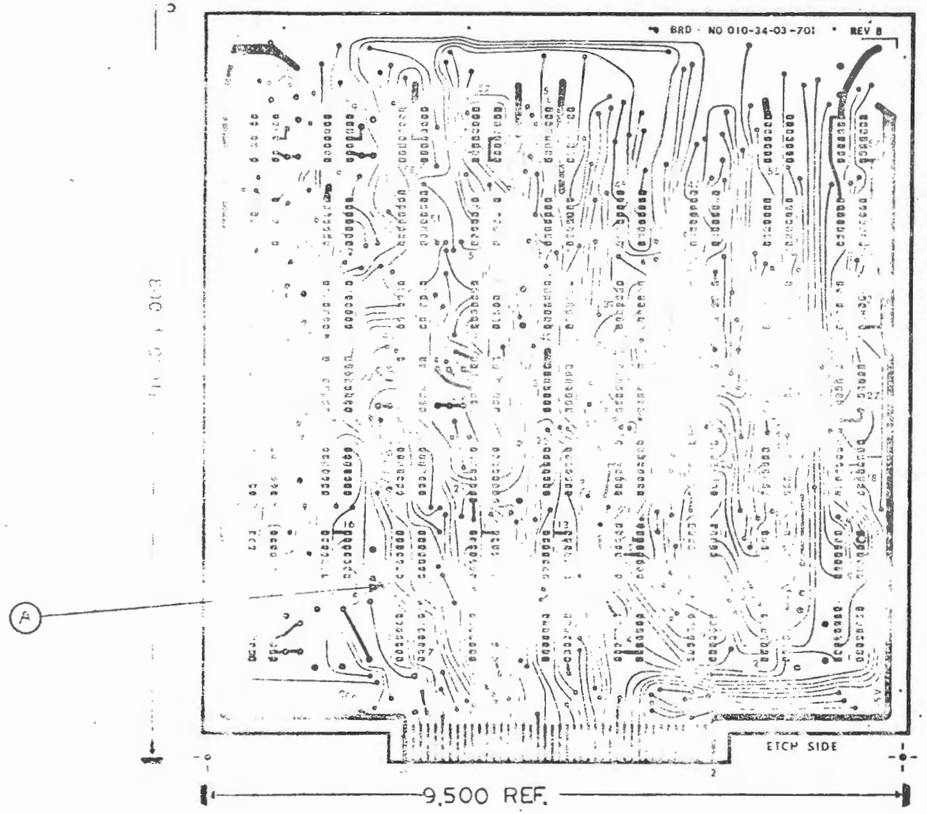
NEXT ASSY 010-10-00

TITLE **P.C. BOARD ASSY DUAL PRINTER (PRINTEC) 7018**

SIZE	PC	SS	NO	REV
D	010-34-02			C4

SCALE 1:1 SHT 1 OF 3

	CUT ETCH FROM
A	EYELET TO I/O PIN 76



ETCH SIDE

ASSEMBLE WITH ARTWORK 010-34-03-701 REV. B 701 B

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

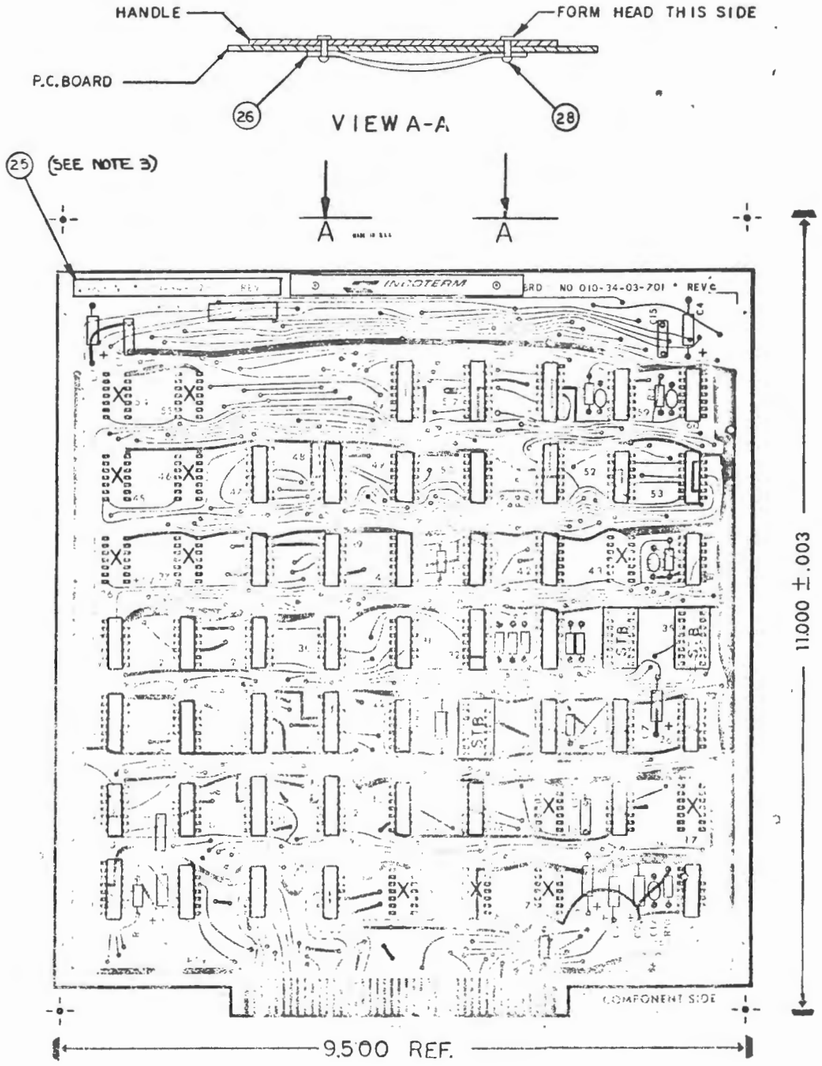
UNLESS OTHERWISE SPECIFIED
TOLERANCES:
DECIMALS .005 (2PLCS)
.02 (1PLCS)
ANGLES 1°

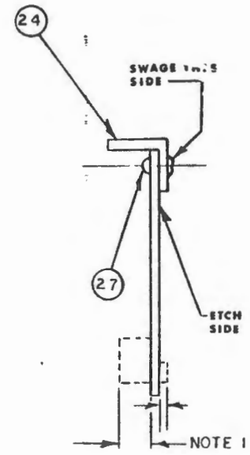
TITLE
P.C. BOARD ASSY
DUAL PRINTER
(PRINTEC)

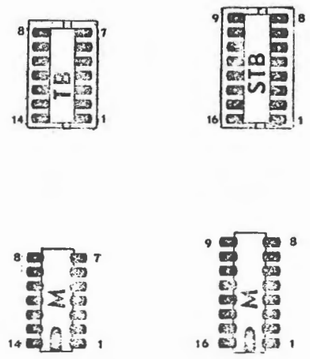
P/S	NO	REV
010-34-02		C4

NEXT ASSY 010-34-03-701 | SCALE 1:1 | SHT 2 OF 3

REVISION HISTORY			
REVISION	DESCRIPTION	DATE	CHK







PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
35	M32,33
34	M13,14,16,22,24,25,26
33	CR1
25	
24	
23	
22	C13 – C16
21	C1 – C4
20	C5 – C8
19	C9 – C12
18	R2,3,9,10
17	R4
16	R1
15	P5,6,7,8,11,12
14	S1,B23,34,35,
13	
12	
11	M8,44,59,60
10	M47,48,57,58
9	M11,12,20,21,51,56
8	M29
7	M1,18
6	M2,3,4,27,28,31,39,42
5	M40,41
4	M9,50,53
3	M10,19,30,38,49,52
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. PATTERN MARKED "X" NOT USED.
3. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 25, AND MARK ASSY. NO. 010-3402-701C AND LATEST ASSY. REVISION.

COMPONENT SIDE

REV. C

ASSEMBLE WITH ARTWORK 0103403-701

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

This document is the property of INCOTERM Corporation and is loaned on the condition that it is not to be disclosed nor used in whole or in part for any purpose without the written permission of INCOTERM Corporation. Failure to observe these restrictions will result in legal action against the party responsible. This condition applies to all drawings, specifications and other documents submitted with or made part of this agreement. Neither receipt nor possession thereof confers or transfers any right in, or license to use, the subject matter of such drawings, specifications or other documents, nor any right to reproduce them or to build apparatus or equipment from them except by agreement in writing with INCOTERM Corporation.

TITLE: P.C. BOARD ASSY DUAL PRINTER (PRINTEC) 701C

DR	DATE
CHK	
ENG	
APPD	

SIZE	P.C.	S.S.	NO.	REV.
D	010-34-02			C4

NEXT ASSY 010-10-00 SCALE 1:1 SHT 3 OF 3

REVISIONS			
REV.	DESCRIPTION	CHK	APPD
1	RELEASED TO FILE	~	~
A	RELEASED RD# 537 10/27/72	~	~
B	REVISED/ECO 2188 12/5/72	[illegible]	[illegible]

M1 IODEC 7442 — ADDXX (28), TYP00 (19), TYP01 (21); L=WIO /3; L=CIO; L=TIO; (CIO8) (CLK13) (CIOA) (CIO8) (CIOC) (CIO7); 7400 M2 WIO2; TIO1 M2; T1002 (SH2); T1002 (S .2); M=2:2

M19 WACK 7400 — (READY) 12, 11; (FUDGE)

M19 SACK 7400 — (CLRNT) 10, 9, 8, 12

M52 TACK 7400 — 8, 9, 10

M29 ACKF 7474 — D, Q, CLR; (CPT9) 11; (CPI2) 13; 9, 12

M40 ACK 7403 — 12, 11, (27)

+5V R1 1K 1/4W

+5V R4 820Ω 1/4W

M18 FUDS-F 7442 — FUNCO0 (20), FUNCO1 (22), FUNCO2 (24), FUNCO3 (26)

M7 7404 — (CIO6) 9, (CIO7); FUI6 8, FUI7 2 (TIO7); (CPT9) (M52-4), (TIO9) (M41-12); FUI8 12, FUI9 6 (TIO9); (CIOA), (CIO8), (TIOC) (M41-1); FUIC 1, FUID 4 (DIS1) (M35-12), (CIOD) (M4-9); FUIE 9, FUIF 10 (DIS2), (CIOF); (M27-11), (FUI8) 4, (CPT9) 5

M52 FUI8T9 7400 — 6

M50 CLK13 7402 — (CIO) 5, CPI13 6; (CIOE), (CIOD), (CIOF)

M53 CIO8 7402 — 9, 8, (CIO)

(CIBI-SH2); (PRDA 0-3) (SH2); 10

M40 TIO6 7403 — 6, 5, 4 (READY1)

M40 TIO7 7403 — 3, 1, 2 (READY2)

M41 TIO8 7403 — 11, 12, 13 (FUIE)

M41 TIO9 7403 — 8, 9, 10 (AVAIL1) (SH2) (FUIF)

M41 TIOC 7403 — 3, 1, 2 (AVAIL2) (SH2) (FUIC)

M41 TIOD 7403 — 6, 4, 5 (FUID); (STB 23-4) (STB 23-9) M42

7404 SHRI2 — 10, 11 (SHEAR ERROR 2) (M32-13) (SH2)

7404 SHRI1 — 12, 13 (SHEAR ERROR 1) (M31-13) (SH2)

M29 INT 7474 — D, CLK, CLR, Q; (READY) 2; 3, 1

M30 FUDGE 7400 — 11, 13, 12 (WIOI)

M30 INTG 7400 — 10, 9, 8, 13

7404 INTX M39 — 12 INTX 30

M30 CLRNT 7400 — 2 (WACK), 1 (RESET)

7404 CLI M37 — 12, 13

M39 SEL I — 31 SELECT IN, 3, 4

M30 INTSEL 7400 — 5, 6 SELECT OUT (32)

M39 REDY1 7404 — 8, 9 (WACK) (CINT)

M38 READY 7400 — 6, 5, 4

M53 REDA1 7402 — (M32-13) 5, (AVAIL1) (SH2), STB 34-4, STB 23-1, 6, 4, 5

M49 REDB1 7400 — 6, 5, 4

7404 REI1 M39 — 6, 4

M48 REDY1 7476 — J, K, CLR, Q; (CPT2) 1, (CIO6) 16, 3, 14 (TIO6)

M48 DIS1 7476 — (RESET) 7, (FUIC) 9, (CLK13) 6, (FUID) 12, 10

M57 INHRY1 7476 — (REQRI1) 7, SET, 11, STB 23-6, 6, 12, CLR, 8

M57 INHRY2 7476 — SET, 15, STB 23-12, 1, 16, CLR, 3 (REDY2)

M47 DIS2 7476 — (RESET) 7, (FUIE) 9, (CLK13) 6, (FUIF) 12, 10

M47 REDY2 7476 — (CPT2) 1, (CIO7) 16, 14 (TIO7) (INHRY2)

M49 REQR2 7400 — (REQRI 2) M43, 8, 10, 11, 9 (RES2)

M49 CIOF 7400 — (CLK13) 12, (FUIF) 13

M50 REDA2 7402 — 13, 12, (M33-2) (AVAIL2-SH2); 11, STB 23-11, STB 34-7

M49 REDB2 7400 — 2, 1, 3

7404 REI2 M39 — 11, 10

M47 REDY2 7476 — J, K, CLR, Q; (CPT2) 1, (CIO7) 16, 14 (TIO7) (INHRY2)

M59 DELAY1 9601 — (STRB1) 2, 3, 4; Z2 15K; C9 .022uF; 11, 13, Q, 6, TB 792

M44 TIMING1 9601 — C11 .022uF; R9 15K; 11, 13, Q, 8, STB 23-5, 6, STB 35-7

M60 DELAY2 9601 — (STRB2) 2, 3, 4; R3 15K; C10 .022uF; 11, 13, Q, 6, STB 35-13

M8 TIMING 2 9601 — C12 .022uF; P10 15K; 11, 13, Q, 8, STB 23-2, 6, STB 35-8

M38 RESET 7400 — RESET 9, 8, 2, 3; (CPT2) 1; (DIS1), (DIS2), (CLRNT), (BUSY 1)

M35 — (CMI) 3, BUSY 1 5, BUSY 2 4; CPT13 11, 10, 1, 2, CLK13; CPI13 12, 13; 7404 RES1 M28, RES2 M28; RESI 7404 M4 — 13, 12

7404 CPI2 M4 — CPT2ON 34, 3, 4; (ACK-) 5; CPT2 6 (REDY2) (M47-1), (REDY1) (M48-1), (M36-1)

7404 CPI9 M4 — CPT9ON 36, 1, 2; 13; CPT9 12 (POWER1), (POWER2), (ACKF), (STRB1), (STRB2), (FUSTB)

M9 CIO6 7402 — (CIO) 5, (FUD6) 6; 4, 5

M10 STRB1 7400 — (CPT9) 4, 6, (REDY1)

M9 CIOA 7402 — (CIO) 9, (FUDA) 8; 10, 2

M19 POWER1 7400 — (CPT9) 1, 3

M10 STOR1 7400 — 1, 2, 3

7404 STI1 M2 — 4, 3 (DELAY1)

OTB00 (3), OTB01 (5), OTB02 (7), OTB03 (9), OTB04 (11), OTB05 (13), OTB06 (15), OTB07 (17)

M3 7404 BI0 (2DB0) (FRDA0) (SH2); BI1 (2DB1) (PRDA1) (SH2); BI2 (2DB2) (PRDA2) (SH2); EI3 (2DB3) (PRDA3) (SH2); BI4 (2DB4) (PRDA4) (SH2); BI5 (2DB5) (PRDA5) (SH2); BI6 (2DB6); BI7 (2DB7)

M11 1DB0-3 7475 — D1 1 (P1B0) (SH2) (P125-2); D2 14 (P1B1) (SH2) (M14-2); D3 11 (P1B2) (SH2) (M14-5); D4 8 (P1B3) (SH2) (M14-13)

M12 1DB4-7 7475 — D1 1 (P1B4) (SH2) (M13-2); D2 14 (P1B5) (SH2) (M25-13); D3 11 STB 34-9; D4 8 STB 34-8

M10 STRB2 7400 — (CPT9) 12, 11; (REDY2) 13, 1

M9 CIO7 7402 — 3, 2; (CIO), (FUD7)

M19 POWER2 7400 — (CPT9) 4, 6; 5, 13

M9 CIO8 7402 — 12, 11; (CIO), (FUD8)

STOR2 7400 M10 — 9, 10, .3

7404 STI2 M2 — 8, 9 (DELAY2)

M20 2DB0-3 7475 — (BI0) 2, (BI1) 3, (BI2) 6, (BI3) 7; D1 1 (P2B0) (SH2) (M13-5); D2 14 (P2B1) (SH2) (M16-13); D3 11 (P2B2) (SH2) (M13-13); D4 8 (P2B3) (SH2) (M24-13)

M21 2DB4-7 7475 — (BI4) 2, (BI5) 3, (BI6) 6, (BI7) 7; D1 1 (P2B4) (SH2) (M22-5); D2 14 (P2B5) (SH2) (M16-2); D3 11 STB 35-9; D4 8 STB 35-10

M38 REOR1 7400 — (RES2) 9, 10, 8; 7404 REQRI M28 — 9, 1, 8 (INHRY1)

M38 CIOD 7400 — (FUID) 12, (CLK13) 13, 11

001

INCOTERM CORPORATION — Hayes Memorial Drive, Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES IN: DECIMALS .005 (SPLCS) .02 (2PLCS); ANGLES 2°

DR R PARKER — DATE

CHK C R Shirpey

ENG [illegible]

APP [illegible]

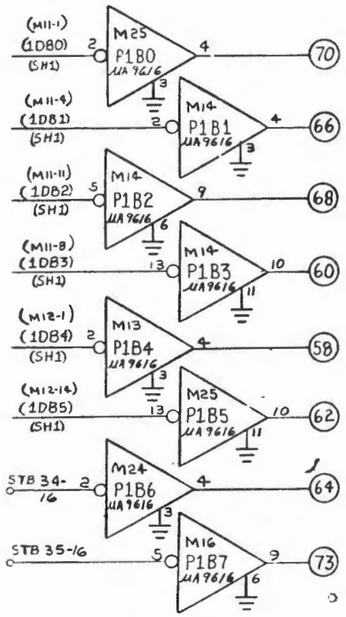
NEXT ASSY D10-34-02

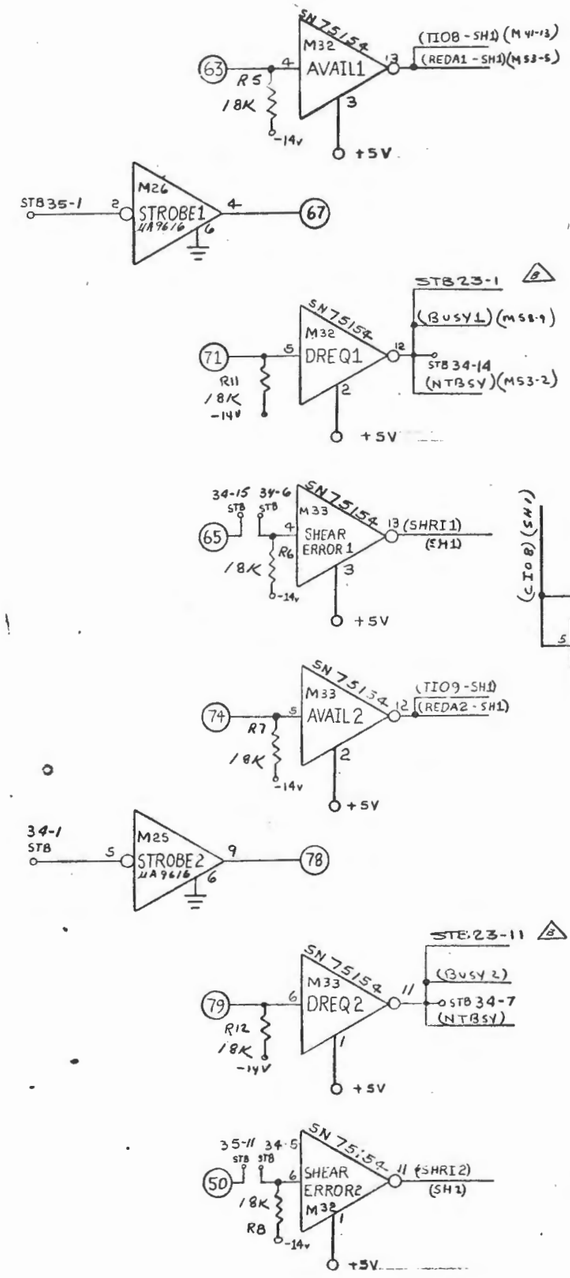
TITLE: LOGIC DIAGRAM DUAL (PRINTEC) PRINTER CONTROLLER

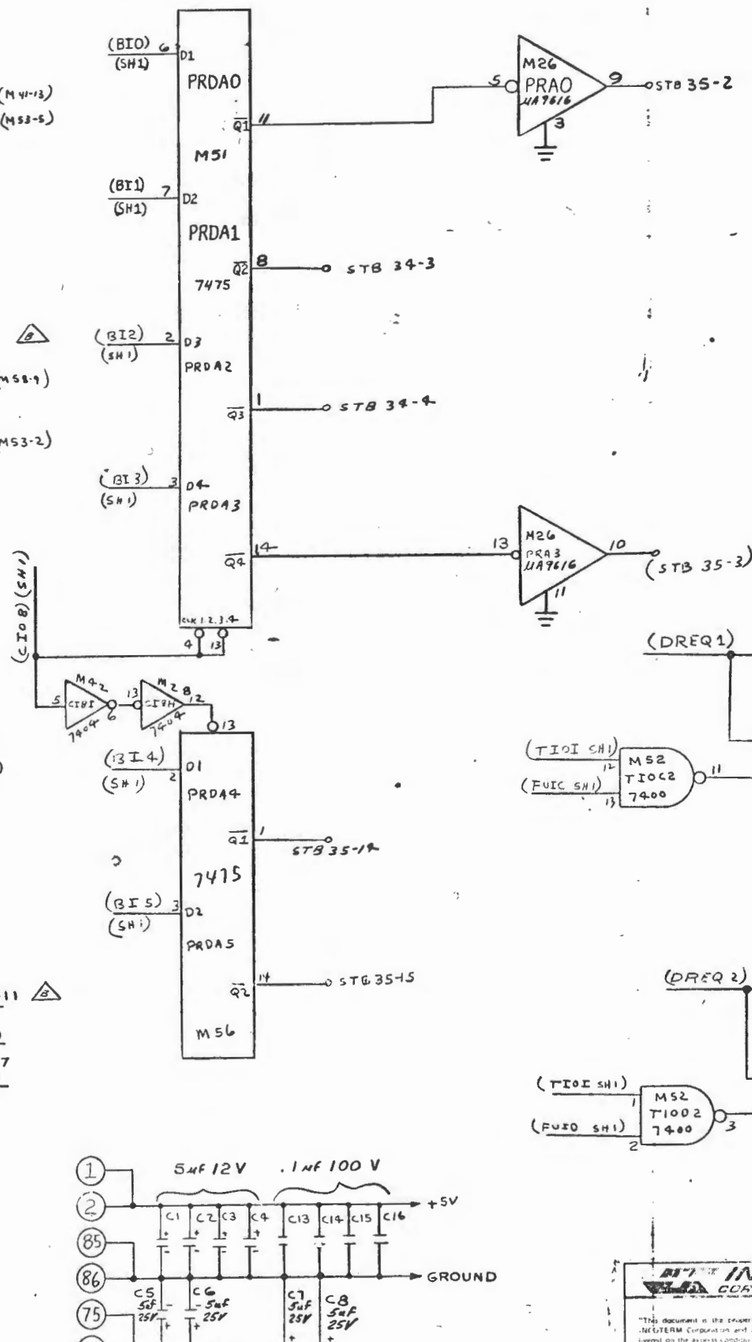
SIZE D — P.C. — S.S. — NO. D10-34-01 — REV B

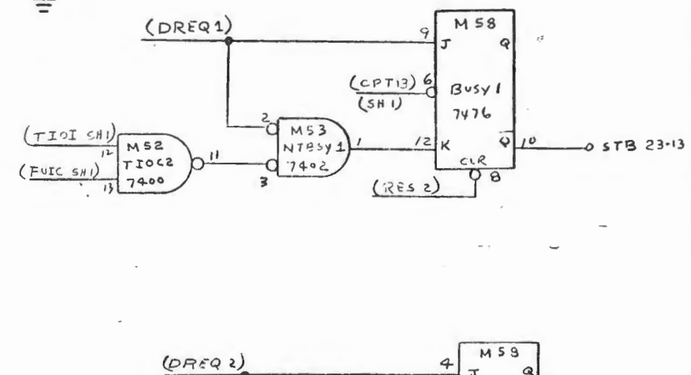
SCALE NONE — SHT 1 OF 2

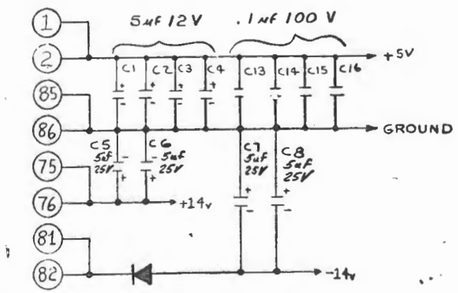
291











001

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right in any such event shall be conveyed by implication or otherwise."

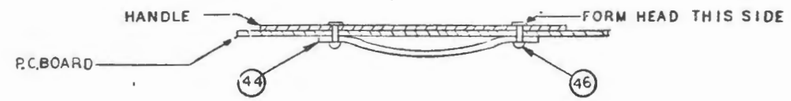
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (.13mm)
.02 (.5mm)
ANGLES 2°

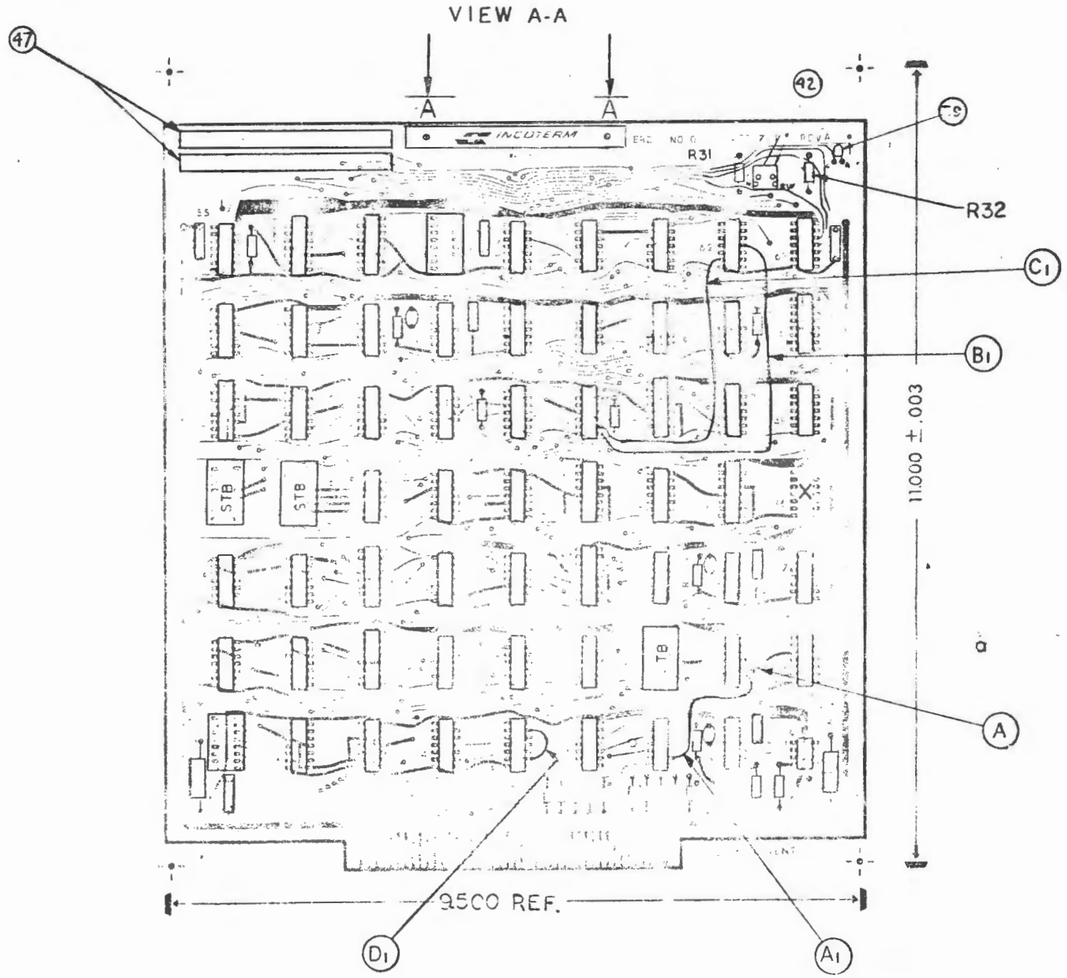
TITLE
LOGIC DIAGRAM
DUAL (PRINTEC)
PRINTER CONTROLLER

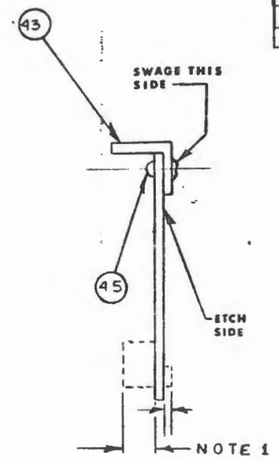
DRAWN
CHK
ENGR
APPD
MFG APPV
DATE

SIZE D | CODE NO. 010-34-01 | REV B
SCALE NONE | SHT 2 OF 2

REVISION HISTORY				
REVISION		DESCRIPTION RD#539	DATE	CHK
A		RELEASED 11/3/72		
	A1	REV. CHANGE ONLY/ECO 2264		
	A2	REV. CHANGE ONLY/ECO 2264A		
	A3	REV. CHANGE ONLY/ECO 2417		
	A4	REV. CHANGE ONLY/ECO 2477		
B		REVISED/ECO 2618		

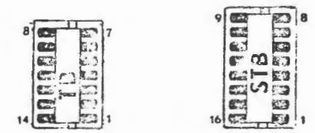


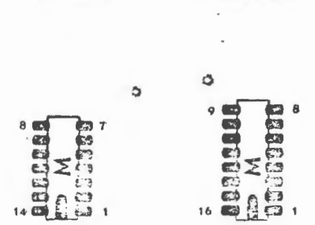




A	CUT P.C. AT M17-2
A	ADD WIRE M2-2 TO M17-2
B	ADD A WIRE M2-1 TO M2-4
C	ADD WIRE M2-2 TO M2-13
D	ADD WIRE M5-2 TO M5-6

ITEM NO.	REFERENCE DESIGNATION
48	STB 1,10, 24,29, 58
47	C 1,2
46	C 3 THRU 9, 23
45	C 22
44	C 20, 21
43	R 31, 33, 34
42	R 24, 28
41	R 36
40	R 17, 30, 35, 37
39	R 23 THRU 27
38	R 32
37	R 18 THRU 22
36	
35	M 8, 26, 49
34	M 9
33	M 30, 31
32	M 55
31	M 24, 33, 35, 37, 43, 54, 56, 57
30	M 1, 2, 21
29	M 50
28	M 10, 11, 19, 20, 44, 48
27	M 14
26	M 4, 7, 46, 53
25	M 7
24	M 6, 13, 18, 22, 38, 47, 59
23	M 2, 3, 40, 42, 53,
22	M 5, 27, 32, 39, 52, 60
21	M 15, 23, 25, 34, 41, 45, 51, 61, 62
20	
19	
18	
17	
16	
15	
14	
13	
12	
11	
10	
9	
8	
7	
6	
5	
4	
3	
2	
1	





PIN NUMBERING AND ORIENTATION

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. PATTERNS MARKED 'X' NOT USED.
3. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABLE, ITEM 47 AND MARK ASSEMBLY NO. 010-35-02-701A AND LATEST ASSY REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-35-03-701 REV A

ITEM NO.	PART NO.	DESCRIPTION	QTY.
48	945-02-02-001	WIRE #24 GA SOLID WHITE	1.5 FT
2	010-35-03-701	ARTWORK ASSY REV A	1

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .05 (1PLCS) .02 (2PLCS)
ANGLES 2°

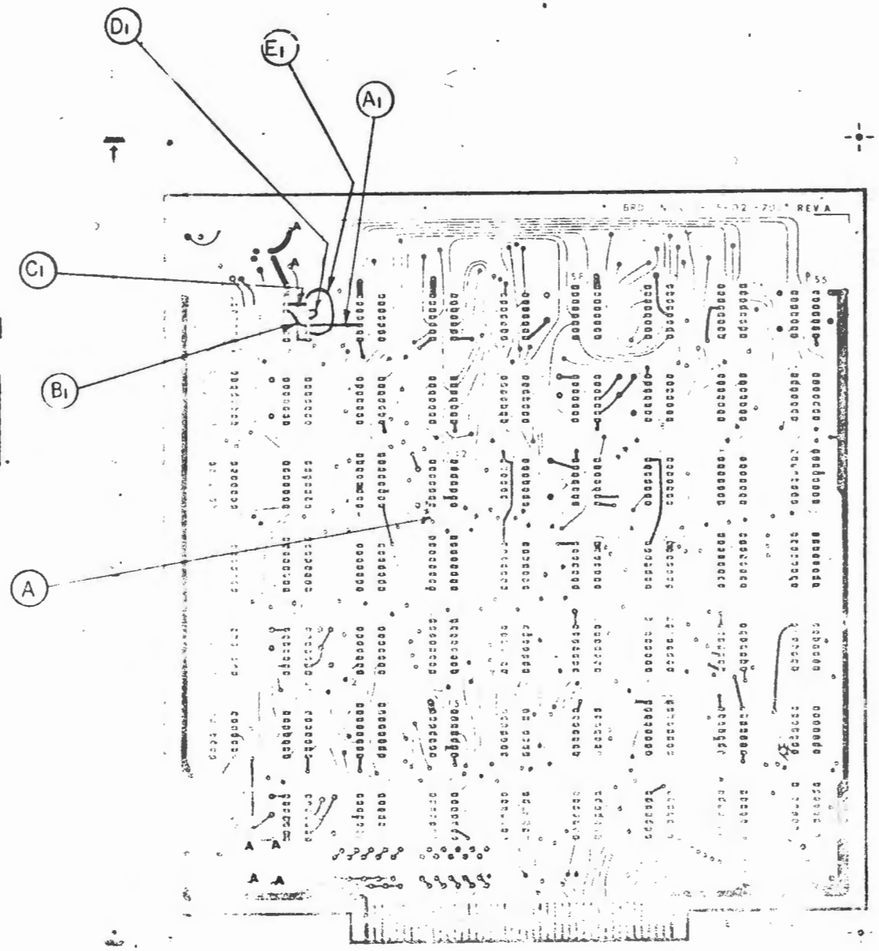
DR [illegible] DATE [illegible]
CHKD [illegible] DATE [illegible]
NEXT ASSY 010-10-00

P.C. BOARD ASSY
UNIT CONTROL TIMING INTRFC. PWA

SIZE	P.C.	S.S.	NO.	REV
D	010-35-02			B

SCALE 1:1 SHT 1 OF 3

REVISION HISTORY			
REVISION	DESCRIPTION	DATE	CHK



A	CUT P.C.AT M42-2

A1	ADD WIRE M01-3 TO M62-12
B1	ADD WIRE M02-12 TO M62-5
C1	ADD WIRE M02-6 TO M62-9
D1	ADD WIRE M62-10 TOM62-11
E1	ADD WIRE M62-8 TOM62-13

ALL OTHERS	.040 ±.003 DIA.	1224
N	.187 +.003 −.000 DIA. DO NOT PLATE THRU	
M	.156 +.003 −.000 DIA. DO NOT PLATE THRU	
G		
F		
E		
D		
C		
B	.062 ± .003 DIA.	
A	.052 ± .003 DIA.	
DESIGNATION	SIZE AFTER PLATING EXCEPT WHERE NOTED	QUANTITY

HOLE CHART

ETCH SIDE

ASSEMBLE WITH ARTWORK 010-35-03 701 REVA

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2

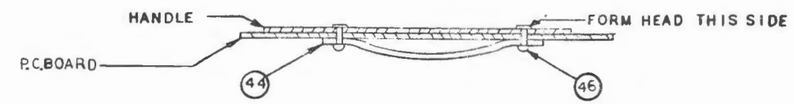
		DATE
DR		
CHK		
ENG		
APPD		
NEXT ASSY		

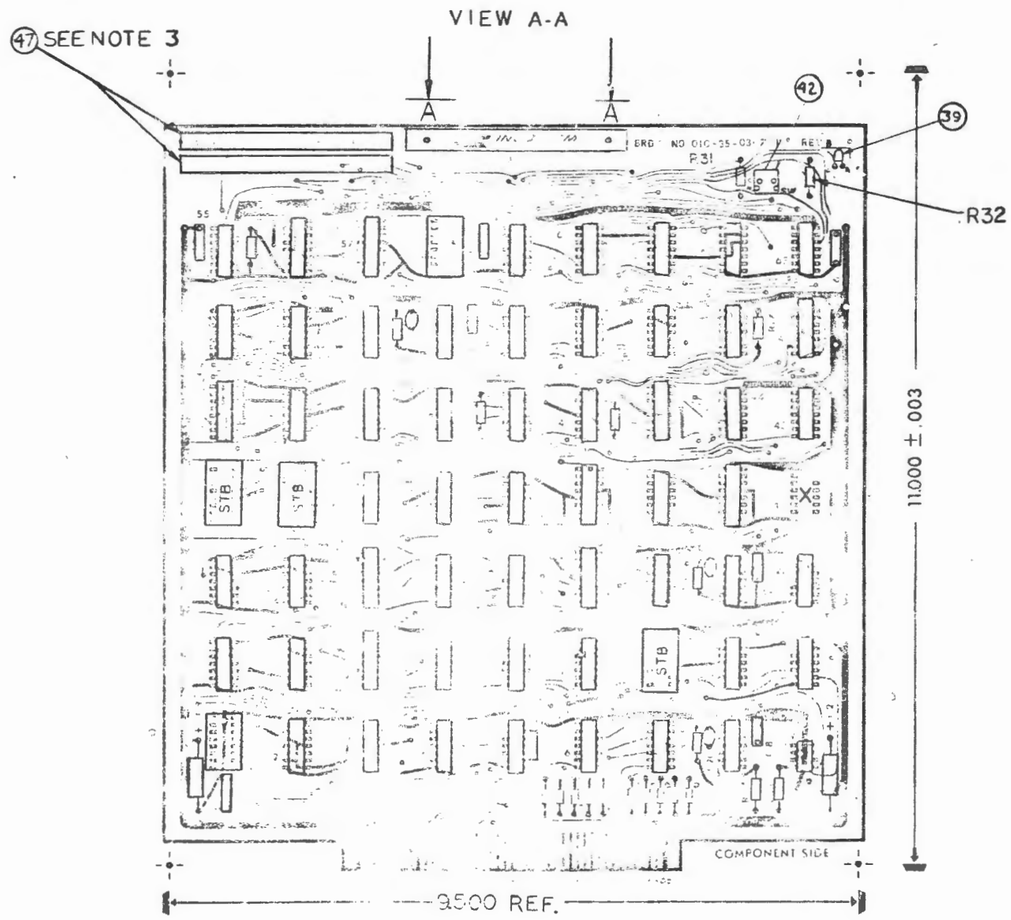
TITLE
P.C.BOARD ASSY
UNIT CONTROL
TIMING INTERFACE
701A

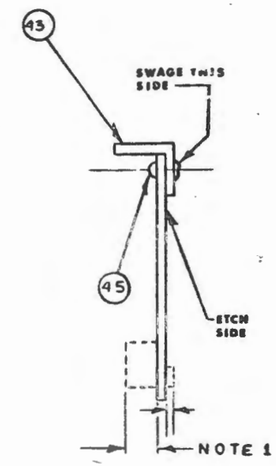
SIZE	F.C.	S.S.	NO	REV
D	010-35-02			B

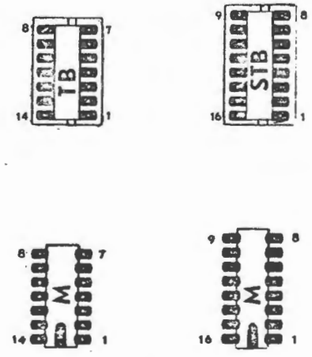
SCALE 1:1 SHT 2 OF 3

REVISION HISTORY				
REVISION		DESCRIPTION	DATE	CHK









PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
8	
7	
6	
5	
4	
3	
2	
1	
27	C 1, 2
26	C 3 THRU 9, 23
25	C 22
24	C 20, 21
23	R 31, 33, 34
22	R 28, 29
21	R 36
20	R 17, 30, 35, 37
27	R 23 THRU 27
26	R 32
25	R 18 THRU 22
24	
23	M 8, 26, 49
22	M 9
21	M 30, 31
20	M 55
19	M 24, 33, 35, 37, 43, 54, 56, 57
18	M 12, 21
17	M 50
16	M 10, 11, 19, 20, 44, 48
15	M 14
14	M 17, 45, 53
13	M 7
12	M 46, 13, 18, 22, 38, 47, 59
11	M 2, 3, 40, 42, 53
10	M 5, 27, 32, 39, 52, 60
9	M 15, 23, 25, 34, 41, 45, 51, 61, 62

NOTE:

1. HEIGHT LIMITATIONS.

COMPONENT SIDE OF BOARD .400 MAX.

ETCH SIDE OF BOARD .080 MAX.

2. PATTERNS MARKED 'X' NOT USED.

3. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABLE, ITEM 47 AND MARK ASSEMBLY NO. 010-35-02-701A AND LATEST ASSY. REVISION.

ASSEMBLE WITH ARTWORK 010-35-03-701 REV B

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DRN Doug Taylor 10/1/74
CHK Jim Rubin 10/1/74
ENG'G
APPD'G
NEXT ASSY 010-10-00

TITLE
P.C. BOARD ASSY
UNIT CONTROL
TIMING INTRFC 701

SIZE	P.C	S S	NO	REV
D	0103502			B

SCALE 1:1 SHT 3 OF 3

REVISIONS			
REV	DESCRIPTION	CHK	APPD
A	RELEASED 11/3/72		
B	REVISED, ECO 2264A		

REIEVED DATA (66) C10 .001 μf R18 150Ω 7405 R23 560Ω C15 .001 μf M6 7404 STB 16 (15) 3 RDATA (SH3,4) (M53-13) 14

+5V (1)(2) C1 .47μF C2 47μF C3 .1μF C4 .1μF C5 .1μF C6 .1μF C7 .1μF RETURN (86)(85)

RCV INFO (62) .001 μf C11 R19 150Ω 7405 R24 560Ω C16 .001 μf

RCVINFO (M40-12) (SH-2)

M17 7410 M8 9601 C20 .0014F 30K R28 +5V C8 .1μf MODE CHANGE (M56-3) (SH3)

RPT (58) .001 μf C12 R20 150Ω 7405 R25 560Ω C17 .001 μf

RPT (SH1)(M35-16)

M6 7404 6 RPT (SH3)(M35-4)

M7

CLEAR TO SEND (60) .001 μf C13 R21 150Ω 7405 R26 560Ω C18 .001 μf

CTS (SH2,3)(M42-9, M27-6, M27-8)

M26 9601 C21 .001μF R29 30K C9 .1μF CTSP (M37-2) (SH2)

CLOCK (75) .001 μf C14 R22 150Ω 7405 R27 560Ω C19 .001 μf

M6 7404 M42 WCL 7403 M62 WCLTH 7400 M62 WCLTA 7400 M62 WCENB 7400 R30 1K

(M59-1) (SH3) XMIT RDY

(SH3) (M59-2) GO READ

M43 7476 M43 7476 SET

(SH2) (M48-1) T9-15

M27 7402

M47 7404 SCLOCK (SH3) (M56-1)

M38 7404 SCLOCKA (SH-4) (M31-8)

SCLOCK (SH3) (M52-12)

+5V R31 75Ω 1/2W S1 NC C (71) POLAR TEST

POLAR TEST (40-2) (SH2)

M E9 7404 LED 270Ω R32 +5V

M18 7404 (M48-6) (SH3) SDOUT 16 STB 16 2 1

(SH3) DATAEN 2 M9 75451A (70) XMIT DATA

(M18-2)

(M23-11) (SH2) SET RTS M34 7400 M14 7420

(M38-6) (SH2) CLR

(SH1) (M6-6) RPT

(M17-1) (SH1) RPT

(M37-14) (SH2) READ

(SH3) XMIT GO (M54-5)

(M59-12) (SH3) TF

(SH2) CLRXMIT (M39-10)

M35 7476

M50 7474

M17 7410 RPTFLG (SH2) (N40-5)

M9 75451A R33 75Ω 1/2W +5V R34 75Ω 1/2W (68) RTS

M18 7404 RTS

INTERDATA CORPORATION Hayes Memorial Drive Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .005 (2PLCS) .02 (1PLCS) ANGLES 2°

TITLE UCTIP CONTRL LOGIC DIAGRAM 001

DRN [illegible] DATE 9/14/72

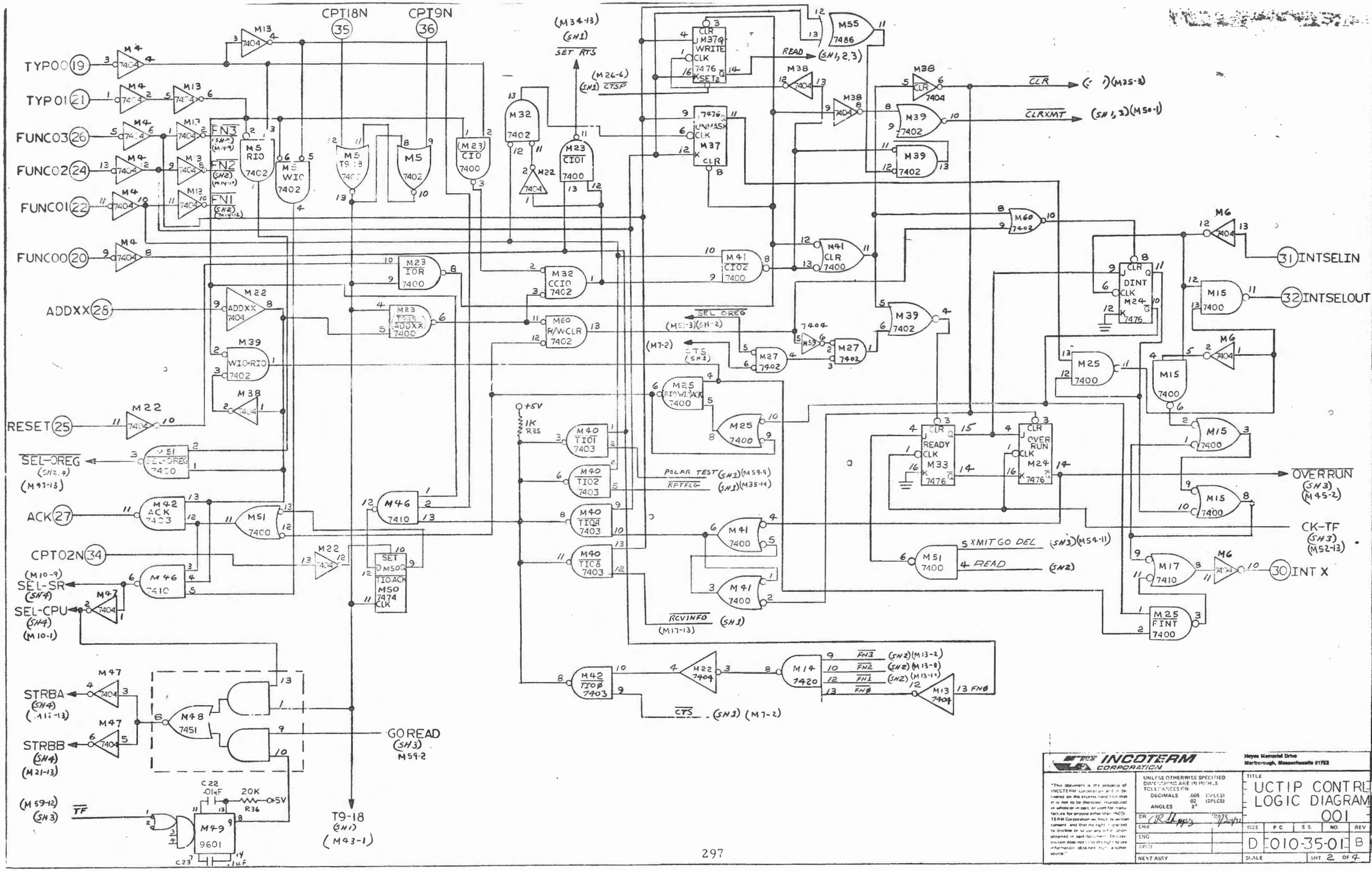
CHK [illegible]

ENG P. Bennett 10/11/72

APPD [illegible]

SIZE D | DWG NO. 010-35-01 | REV B

NEXT ASSY 010-35-02-701 | SCALE | SHT 1 OF 4



297

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (2PLCS) 02 (1PLC)
ANGLES 2°

DR CR Hayes DATE 7/24/72
CHK
ENG
APPD
NEXT ASSY

TITLE
UCTIP CONTRL LOGIC DIAGRAM 001

SIZE	P C	S S.	NO.	REV
D	010-35-01			B

SCALE SHT 2 OF 4

(M50-6)
(SH1) TF
(M99-1)
(SH-2)

M59 7404

TF

7410 M46

(M8-6)
(SH1) MODE CHANGE

7402 M60

7476 M57

7476 M56

7402 M60

7476 M57

7400 M61

7400 M61

7400 M51

+5V
R17
1K

(M47-8)
SCLOCK (SH1)

7403 M53
7403 M53

(M16-3)
(SH1) RDATA

7486 M55

7404 M47

7476 M56

+5V 1K R37

STB 28

7400 M61

STB 58

7486 M55

(M99-13)
(M48-9)
(M43-7)
(SH2,3) GO READ

7404 M59

(M29-1)
(SH4) SR DATA

(SH1,3) XMIT RDY
(MG2-5, MG2-12)

7451

M48

7410 M63

SDOUT → (SH 1) (M18-13)

7404 M18

7451

M44

XMIT RDY (SH3)(M59-1)

GO READ (SH3)(M59-2)

(M31-6)
(SH4) SR MODE

7404 M22

7400 M34

7402 M52

7400 M61

STB 58

7402 M52

(15-5)(SH-2)
XMIT GO DEL

(M34-10)
READ (SH2)

7402 M27

CTS (SH1)
(M7-2)

7402 M52

SCLOCK (SH1)
(M38-3)

CK-TF → (SH2) (M24-7)

7404 M59

7476 M54

7476 M54

XMIT GO → (SH1) (M50-2)

CLRXMT (SH2)(M39-10)

OVER RUN (SH2)
(M24-14)

7400 M45

7404 M18

DATEN (SH1)(M9-2)

This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no rights are granted to the issuee or to any other person under its patents, copyrights, or other proprietary rights. The issuance of this document does not convey the right to use information obtained from another source.

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS .005 (.127 CES)
.02 (.254 CES)
ANGLES 2°

DR CR Hayes DATE 2/7/72
CHK
ENG
APPD
NEXT ASSY

TITLE
UCTIP CONTRL
LOGIC DIAGRAM
001

SIZE D | P.C. 010-35-01 | S.S. | NO. | REV B
SCALE | SHT 3 OF 4

STB 1

ΦTBC0 ③
ΦTB01 ⑤
ΦTE02 ⑦
ΦTB03 ⑨
ΦTB04 ⑪
ΦTB05 ⑬
ΦTB06 ⑮
ΦTB07 ⑰

(M47-2)
(SH2) SEL-CPU
(SH2) SEL-SR
(M44-6)

7451 M10
7451 M19
7451 M11
7451 M20

WORD LENGTH

STB 29-13
STB 29-10
STB 29-12
STB 29-11
STB 28-2
STB 28-15
STB 28-1
STB 28-16

STB 29-1
STB 29-14
STB 29-15
STB 29-16
STB 29-5
STB 29-4
STB 29-3
STB 29-2

(MSS-2) SRDATA (SH3)

(STB16-3) RDATA (SH1)

SR MODE (SH3) (M22-6)

7495 M30
7495 M31

SCLOCKA (SH1) (M38-9)

7475 M12
7475 M21

(M41-4)
(SH2) STRBA
(SH2) STRBB
(M47-6)

B07 (45)
B06 (47)
B05 (49)
B04 (51)
B03 (41)
B02 (39)
B01 (43)
B00 (46)

SEL-OREG (SH2) (MS1-3)

M47 7404

7403 M3
7403 M2

INB07 (18)
INB06 (16)
INB05 (14)
INB04 (12)
INB04 (10)
INB02 (8)
INB01 (6)
INB00 (4)

INCOTERM CORPORATION
Keyes Memorial Drive
Marlborough, Massachusetts 01752

This document is the property of INCOTERM Corporation and is not to be loaned or disclosed to others without written consent of the owner. It is not to be duplicated in whole or in part or used for manufacture for a third party without written permission of INCOTERM Corporation, which shall not be construed as granting any rights under any patent. The recipient agrees to return this document upon request of INCOTERM Corporation. The recipient agrees to the terms stated in said document. The recipient agrees that INCOTERM Corporation does not warrant the accuracy of information obtained from another source.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (MACH)
.02 (APPLIED)
ANGLES 2°

DR [illegible] 1/4/72
CHK
ENG
APPD
NEXT ASSY

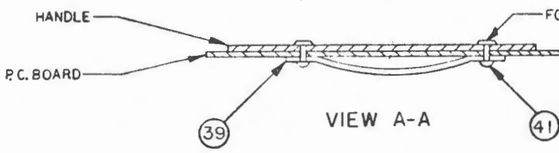
TITLE
UCTIP CONTRL LOGIC DIAGRAM 001

SIZE D | FSCM NO 01035-01 | REV B
SCALE | SHT 4 OF 4

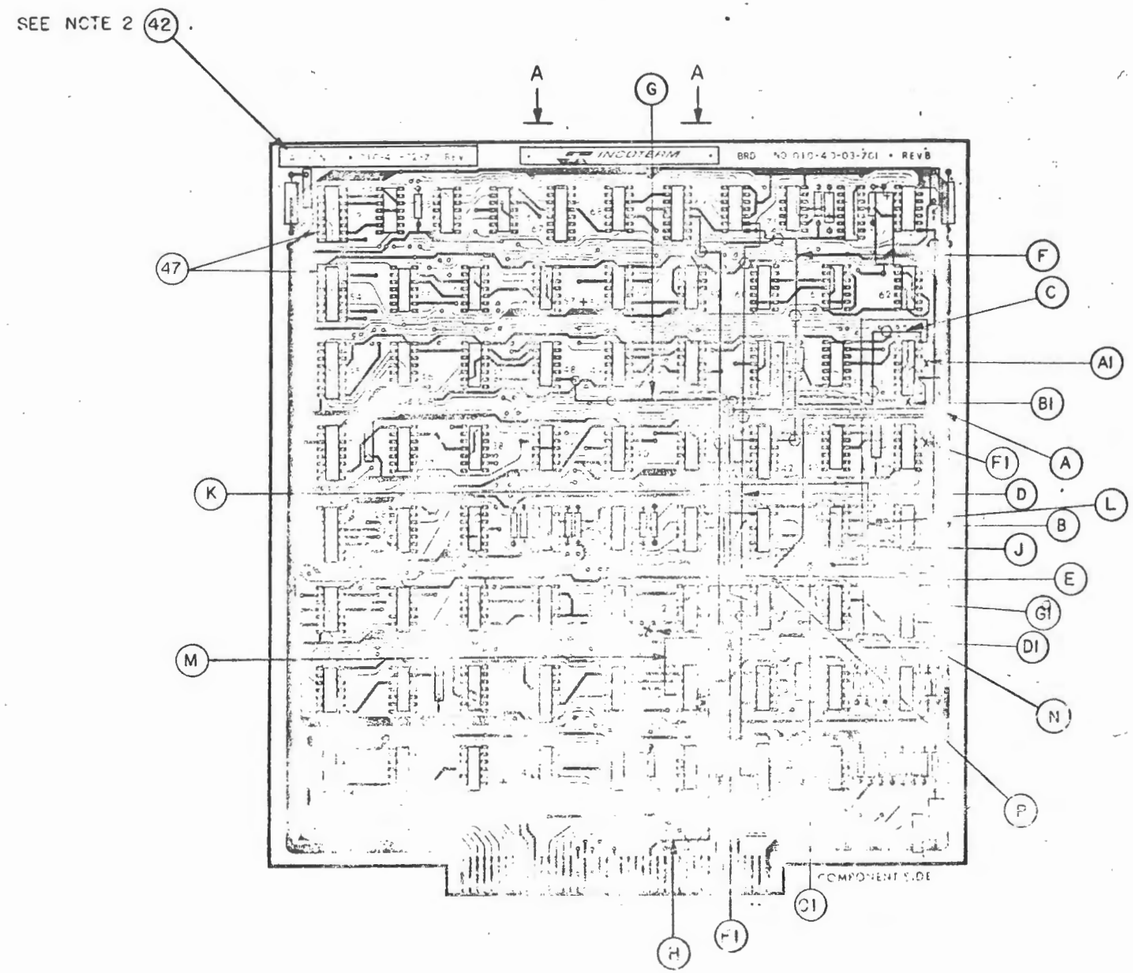
CUT ETCH FROM	
AI	M53-3 TO M53-8
BI	M53-3 TO EYELET
CI	EYELET TO EYELET
DI	M23-1 TO EYELET
EI	M24-8 TO EYELET
FI	M44-5 TO EYELET
GI	M26-8 TO M26-3

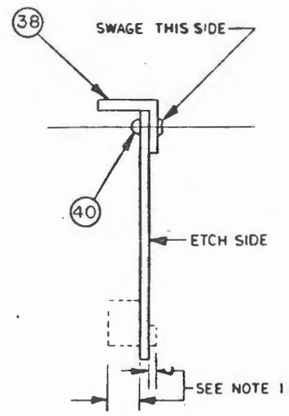
ADD WIRE (ITEM 43) FROM	
A	M53-3 TO M51-8
B	M73-1 TO EYELET
C	M53-8 TO EYELET
D	M7-13 TO M70-2
E	M23-1 TO M69-4
F	M70-1 TO M42-6
G	M42-11 TO M48-2
H	M24-8 TO EYELET
J	M44-5 TO EYELET
K	M53-3 TO M24-10
L	EYELET TO EYELET
M	M14-12 TO EYELET
N	M53-8 TO M26-3
P	M33-9 TO M26-8

ITEM NO.	REFERENCE DESIGNATION
48	R9
47	M54,63
45	CR1
37	C3
36	C1,4,5,6,7,8,9,10
35	C2
34	C11,12,13,14
33	R1,2,5,6,7,8,11,12,13,14, 15,16,19,29,20,21,22, 23,24,25,26,27,30,31
32	R28
31	R17
30	R10
29	R3,4
28	R18
27	M54,63
26	M27,36,45
25	M42
24	M72
23	M9,10
22	M57
21	M23,51,53,67,69
20	M11,38,40,60,62
19	M20
18	M7,12
17	M41
16	M37,43
15	M4,17,30
14	M23,29,44,46
13	
12	M14,18,19,21,32,34 P5,58
11	V1,2,5
10	M8,13,15,16,25,33,47 49,52,65,70,71
9	M3,6,22,24,28,31,35 39,48,56,59,60,61,64,65
8	
7	
6	
5	
4	
3	
2	
1	

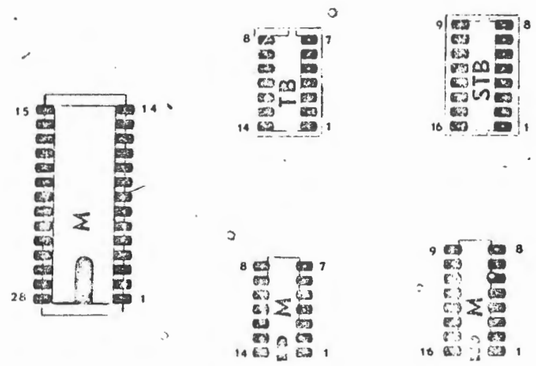


VIEW A-A





REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
B		RELEASED P.D.# 6590		
C		REVISED/ECO 2563		
D		REVISED/ECO 2598		
	DI	REVISED/ECO 2660 3/2/74		
	D2	REV. CHANGE ONLY/2864		
E		REVISED/ECO 3067 9/9/74		
F		REVISED/ECO 3097 11/25/74		
	FI	REV. CHANGE ONLY/ECO 3097A		
G H		ECO 3270 – CHANGES MADE AT REV G. IS COMPLETELY DELETED BY CHANGES MADE AT REV H. REFER ECO#0363A FOR REWORK INSTRUCTIONS IF BOARD ASSEMBLED AT REV G.		
	HI	REV CHG. ONLY ECO 3271		
J		REVISED/ECO# 3318		
	JI	REVISED/ECO 3330		
K		REVISED/ECO 3353 8/19/74		
	KI	REV CHG 3483 10-24-74		



PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REV LABLE, ITEM 42, AND MARK "ASS'Y NO 010-40-02-701" AND LATEST ASS'Y REV
3. ATTACH JUMPER WIRES, ITEM 43, USING GLUE, ITEM 44, TO BOARD IN AREAS MARKED (O).
4. ~~ATTACH CLEAR SLEEVING, ITEM 46, OVER DIODE LEADS BEFORE ATTACHING DIODE TO BOARD.~~

ASSEMBLE WITH ARTWORK 010-40-02-701 REV B

ITEM NO	PART NO	DESCRIPTION	QTY
2	010-40-03-701	ARTWORK (REV B)	1
~~46~~	~~EEPVE105-15~~	~~SLEEVING CLEAR (ALPHA)~~	~~6FT~~
44	MCGLUE	HOT MELT GLUE	AR
43	945-02-02-001	WIRE #24GA SOLID WHT	6FT

INCOTERM CORPORATION, A STRATHMORE ROAD, NATICK, MASSACHUSETTS, 01760

This document is the property of INCOTERM CORPORATION and is delivered in the expressed confidence that it is not to be disclosed, reproduced in whole or in part or used for manufacture by anyone other than INCOTERM, or its licensees, without its written permission. Its transmission does not constitute publication and no right is granted to distribute or use any of the information contained herein for any other purpose.

DRAWN	
CHECKED	
ENG APPR	
MFG APPR	
FIRST USED ON	

P.C. BOARD ASS'Y FLOPPY DISC CONTROLLER -701B

D 010-40-02 KI

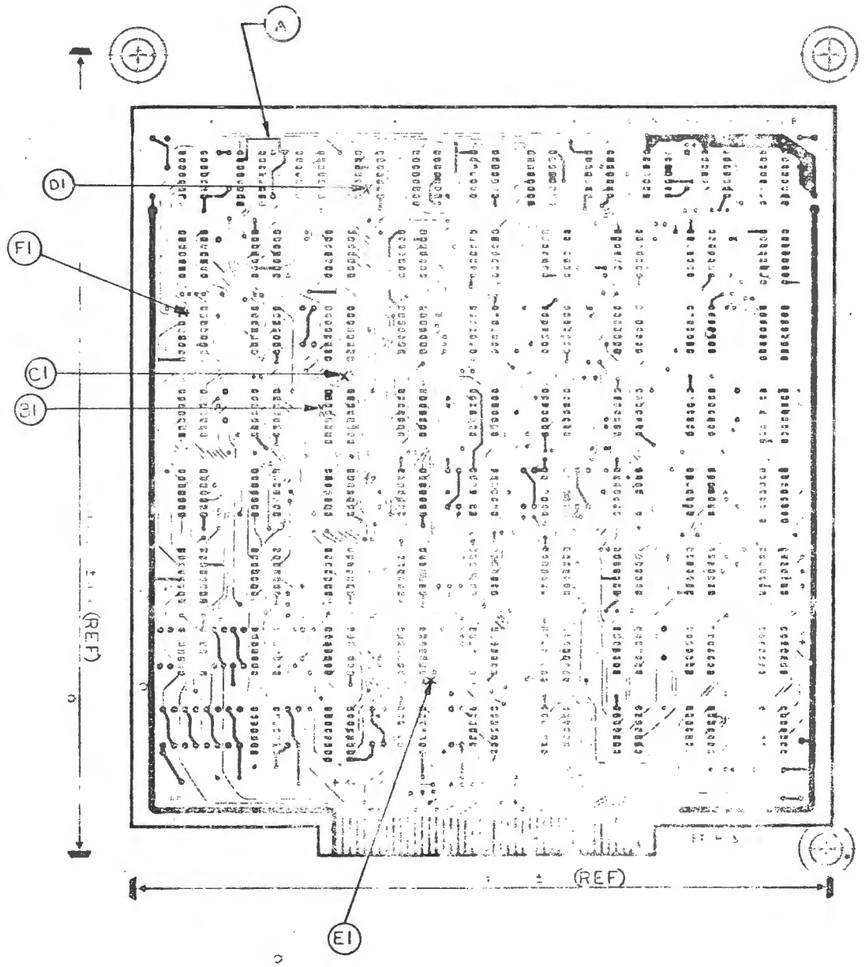
SCALE 1/1 SHT 1 OF 4

300

CUT ETCH FROM	
A1	~~M42-7 TO RC LAND~~
B1	M7-13 TO M42-6
C1	M42-11 TO M70-2
D1	M70-1 TO M70-5
E1	M14-12 TO EYELET
F1	M53-A TO M26-8

JUMPER WIRE ITEM 43 FROM	
A	M42-7 TO EYELET

TO REPAIR CUT ETCH A1



ETCH SIDE

ASSEMBLE WITH ARTWORK REV B

INCOTERM CORPORATION

P.C. BOARD ASSY. FLOPPY DISC CONTROLLER -701B

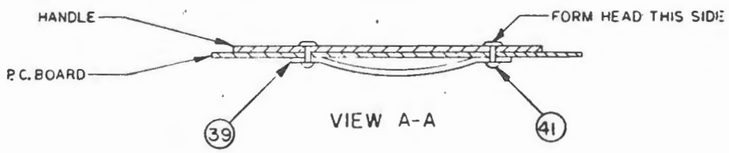
010-40-02 K1

301

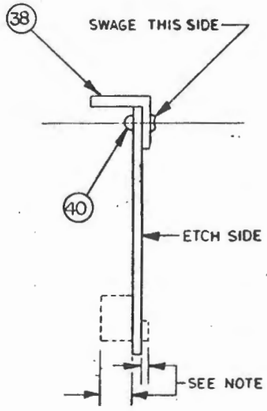
CUT ETCH FROM	
A1	EYELET TO EYELET
B1	M24-8 TO EYELET
C1	M44-5 TO EYELET
D1	M26-6 TO M26-3

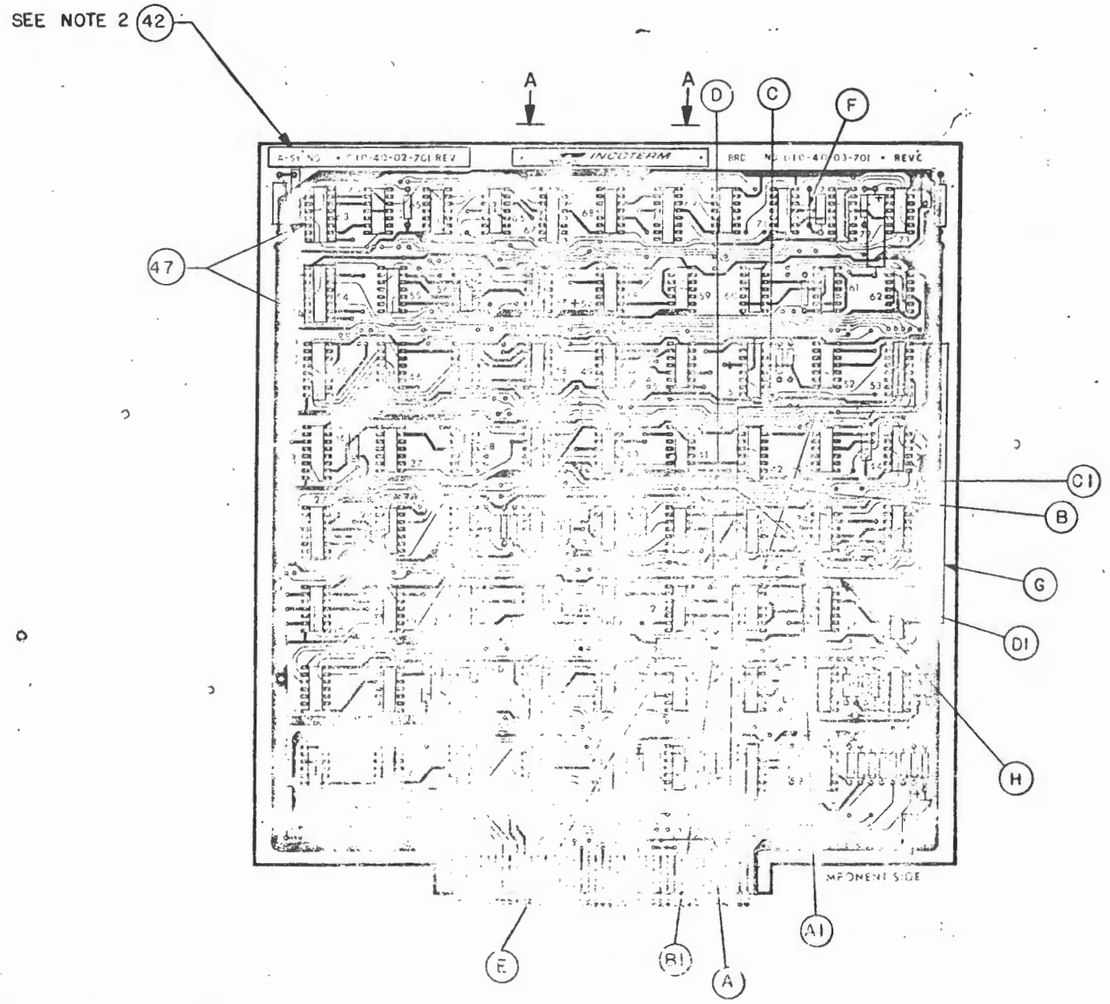
ADD JUMPER WIRE (ITEM 43) FROM	
A	M24-8 TO EYELET
B	M44-5 TO EYELET
C	M53-3 TO M24-10
D	EYELET TO EYELET
E	M14-12 TO EYELET
F	EYELET TO EYELET
G	M53-8 TO M26-3
H	M33-9 TO M26-8

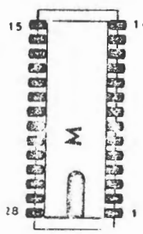
ITEM NO.	REFERENCE DESIGNATION
48	R9
47	M54,63
45	ER1
37	C3
36	C1,4,5,6,7,8,9,10
35	C2
34	C11,12,13,14
33	R1,2,5,6,7,8,11,12,13,14,15,16,19,20,20,21,22,23,24,25,26,27,30,31
32	R28
31	R17
30	R10
29	R3,4,
28	R13
27	M54,63
26	M27,36,45
25	M12
24	M72
23	M9,10
22	M57
21	M26,M51,53,67,69
20	M1,38,40,50,62,66,73
19	M20
18	M7,12
17	M41
16	M37,43
15	M4,17,30
14	M23,29,44,46
13	
12	M14,18,19,21,32,34
11	M1,2,5
10	M3,13,15,16,25,33,47,49,52,65,70,71
9	M3,6,22,24,28,31,35,39,48,55,59,60,61,64,68
8	
7	
6	
5	
4	
3	
2	
1	

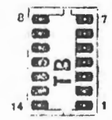


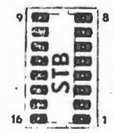
VIEW A-A

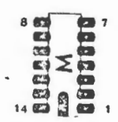












PIN NUMBERING AND ORIENTATION

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REV LABLE, ITEM 42, AND MARK "ASS'Y NO. 010-40-02-701" AND LATEST ASS'Y REV
3. ATTACH JUMPER WIRES, ITEM 43, TO BOARD USING GLUE, ITEM 44 IN APPROXIMATE AREAS MARKED (01).

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
	REDRAWN/ECO 2660		

ASSEMBLE WITH ARTWORK 010-40-03-701 REVC

INCOTERM CORPORATION, 1 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

This drawing is the property of INCOTERM CORPORATION and is issued on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM CORPORATION except under written agreement. The holder of this drawing, by its acceptance, agrees to use all information contained herein for the sole purpose of which it is furnished and neither it nor any part of it may be used for any other purpose. Its issuance does not convey any rights to reproduce or disclose its contents or to manufacture.

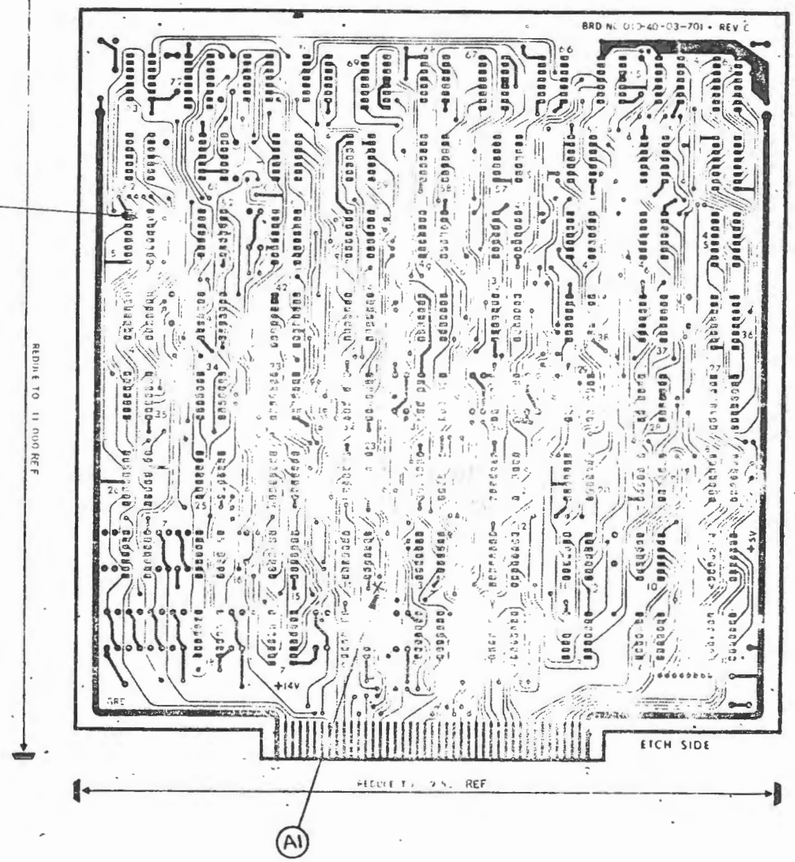
DRAWN	
CHECKED	L.REGE
ENGINEER	L.BERGIN
APPROVED	
FIRST USED ON	

P C BOARD ASS'Y FLOPPY DISC CONTROLLER - 701C

SIZE	DOCUMENT NUMBER	REV
D	010-40-02	K1

SCALE 1/1 SHT 3 OF 4

CUT ETCH FROM	
A1	M14-12 TO EYELET
B1	M53-8 TO M26-8



ETCH SIDE

— ASSEMBLE WITH ARTWORK 010-40-03-701 REV. C

INCOTERM CORPORATION

	P.C. BOARD ASSY. FLOPPY DISC CONTROLLER -701C
	D 010-40-02 K1

REVISION HISTORY				
REVISION		DESCRIPTION	DATE	APP'D
B		CHANGED PER ECO 2563		
C		CHANGED PER ECO 2598		
	C1	REDRAWN PER ECO 2803		
D		REVISED/ECO 2864		
E		REVISED/ECO 3067		
F		REVISED/ECO 3037		
	F1	REVISED/ECO 3271		
G		REVISED/ECO 3313		
	G1	REVISED/ECO 3330		
H		REVISED/ECO 3353		

BOOTSTRAP (SH 2)
CBA
M6 7400
M14 7404
DEVSELAI
STPSTB(SH 7)
DEVSELBI
39 (2IA)
FUNCDEC 4I (SH 1)
FUNCDEC 5I (SH 1)
STEPAI
PARB (SH 7)
STEPI
41
RWLS (SH 7)
LD BUF
M13 7402
SRL (SH3)
SRU (SH3)
SLD (SH3)
FUNCDEC 3I (SH 1)
CBS (SH 2)
PARA (SH7)
DEVSELA
CIO
M14 7404
RWGAI (SH 7)
PARB (SH7)
INT (SH 7)
AUTOI (SH 7)
AUTOACKI (SH 7)
AUTO
STOREA
RWLSI (SH7)
STOREI
M24 7100
SSTA (SH3)
TYP00 19
TYP01 21
ADXX 28
SACKA (SH7)
M12 7442 TYPDEC
WIOI
RIOI
CIOI
TIOI
RIO (SH3)
TIOACK (SH2)
CIOBOOT
M15 7402
FUNCDEC 7I (SH 1)
CIOBOOTI
M13 7404
70
CBS (SH2)
FUNCE 1
M58 7404
RSTI (SH 1)
M67 7476
MASK
IS SINTI (SH7)
PTI3I (SH7) 8
M15 7402
CIOT
TACK 1 (SH 2)
FUNDE2
M58 7404
TACK 2 (SH 2)
+5V
R4 1K
M14 7404
RSTAI
SPRE (SH6)
SPR (SH6)
INTRA (SH7)
T.O. (SH 2)
GAP (SH 6)
READ (SH 6)
INDEXF (SH 6)
GAP CLOCK (SH6)
LOAD CMD (SH3)
MASK (SH 1)
STACT (SH3)
FUNC0
M4 7414
PARB (SH7)
RWSTORAGE (SH7)
20
FUNC 1
22
RWSTORAGE (SH7)
FUNC2
24
FUNC 3
26
RWGAI (SH7)
M7 7442 FUNC DEC
DEVSELA (SH11)
TACK 3I (SH2)
TACKAI (SH2)
STEPAI (SH 1)
TACKBI (SH2)
STEPAI (SH 1)
CIO BOOT (SH 1)
TACK 8 (SH2)
CIORA
M13 7402
CIORI
M14 7404
M5 7103
RSTA
PTI3 (SH7)
M41 7437
RSTI
RESET 25
R3 1K
+5V
WPLA
M15 7402
WPLI
M24 7400
TACK 6 (SH2)
RWLSI (SH 7)
MC2 (SH4)
MC1 (SH4)
WPL (SH4)
MC0 (SH4)

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTORS ARE IN OHMS, 1/4W, ±5%.
   B. ALL CAPACITORS ARE IN MICROFARADS.
   C. ALL DIODES ARE TYPE IN4148.
2. THE FOLLOWING I/O PINS ARE PREASSIGNED AND MUST BE USED FOR THE FUNCTIONS DESCRIBED ONLY
   A. +5V PINS 1&2 C. +12V PINS 75 & 76
   B. GND PINS 85 & 86 D. -15V PINS 61 & 63

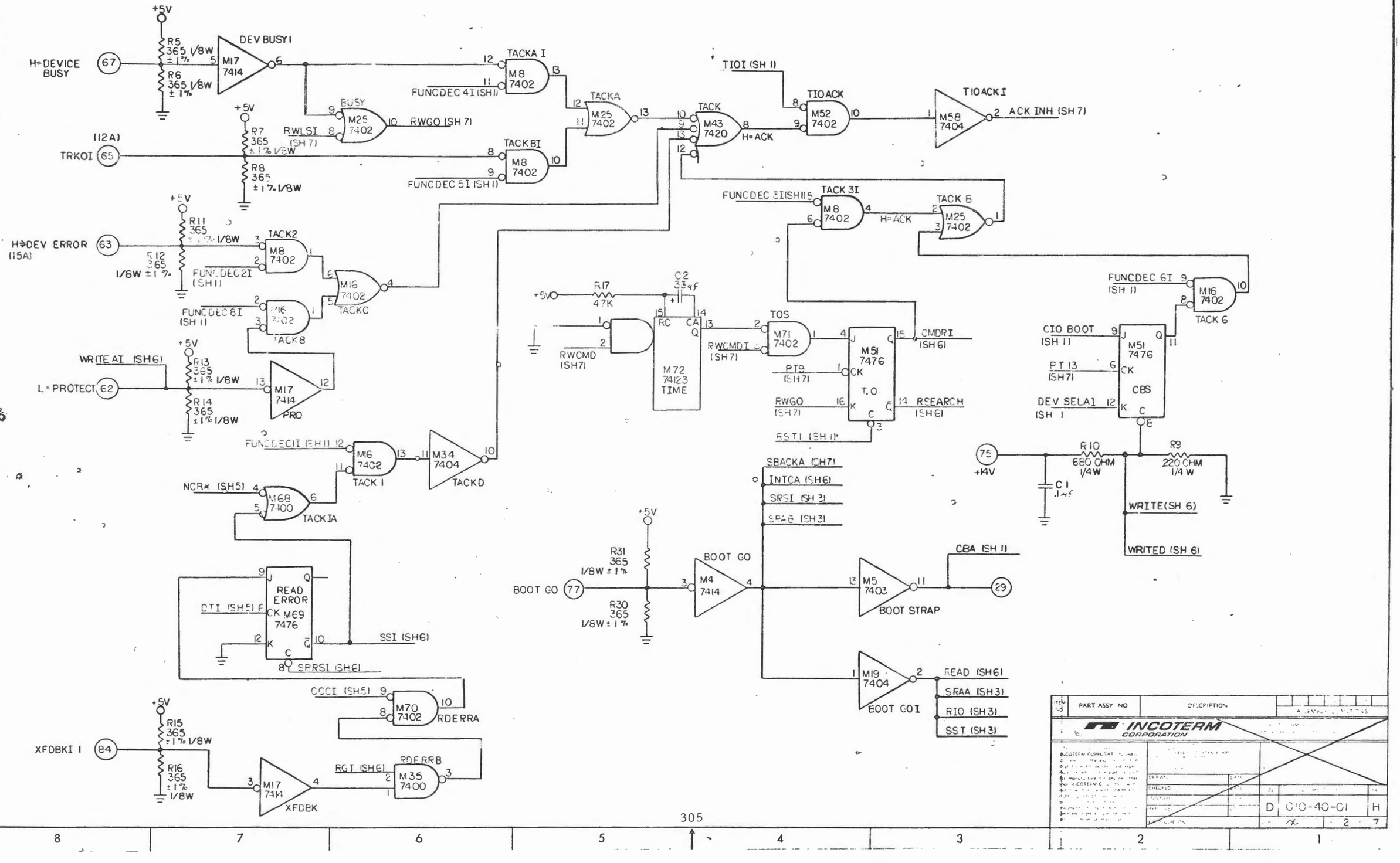
HIGHEST REF DES USED					
R31	C14		M73		
REF DES NOT USED					

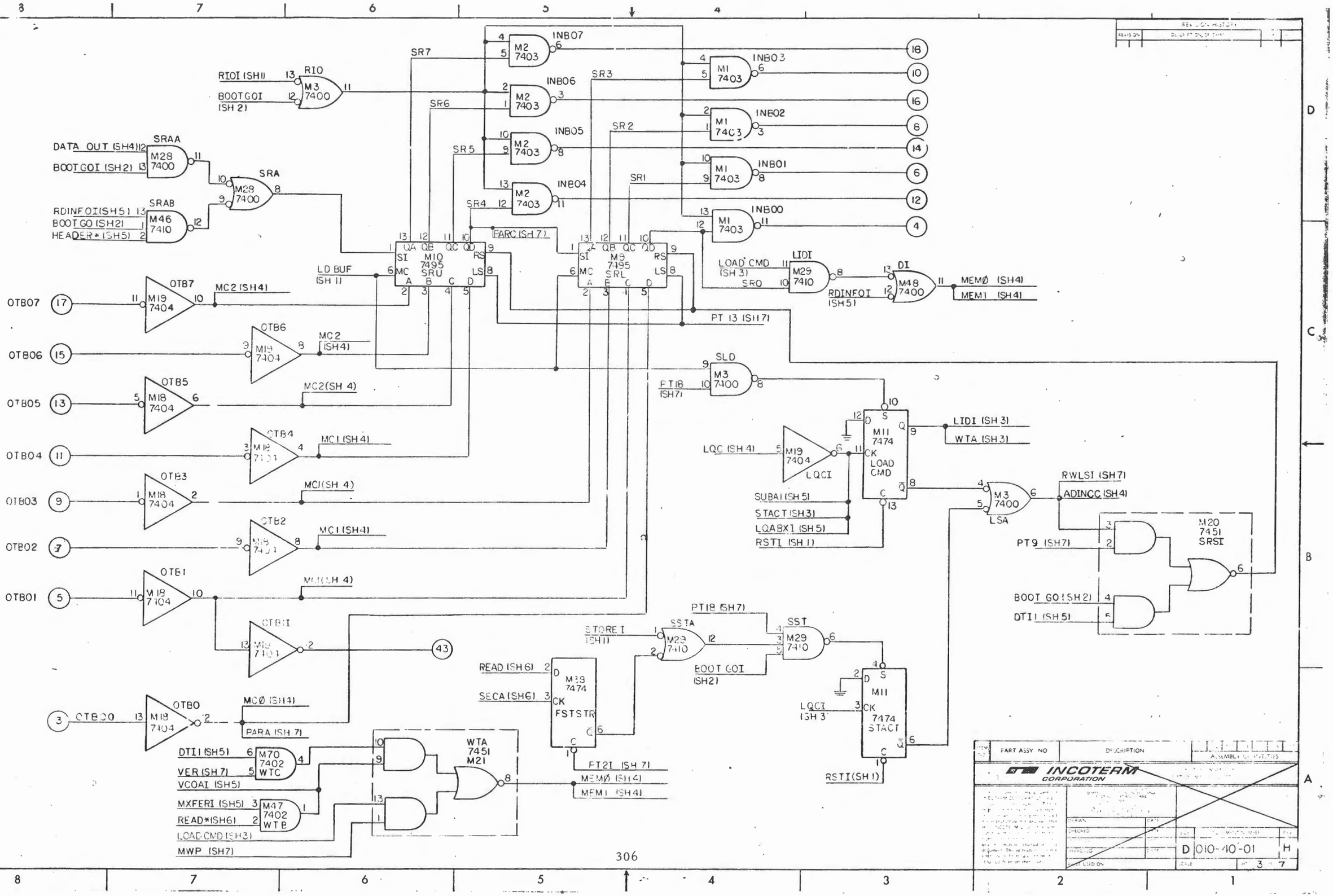
ITEM NO	PART ASSY NO	DESCRIPTION	ASSY TYES

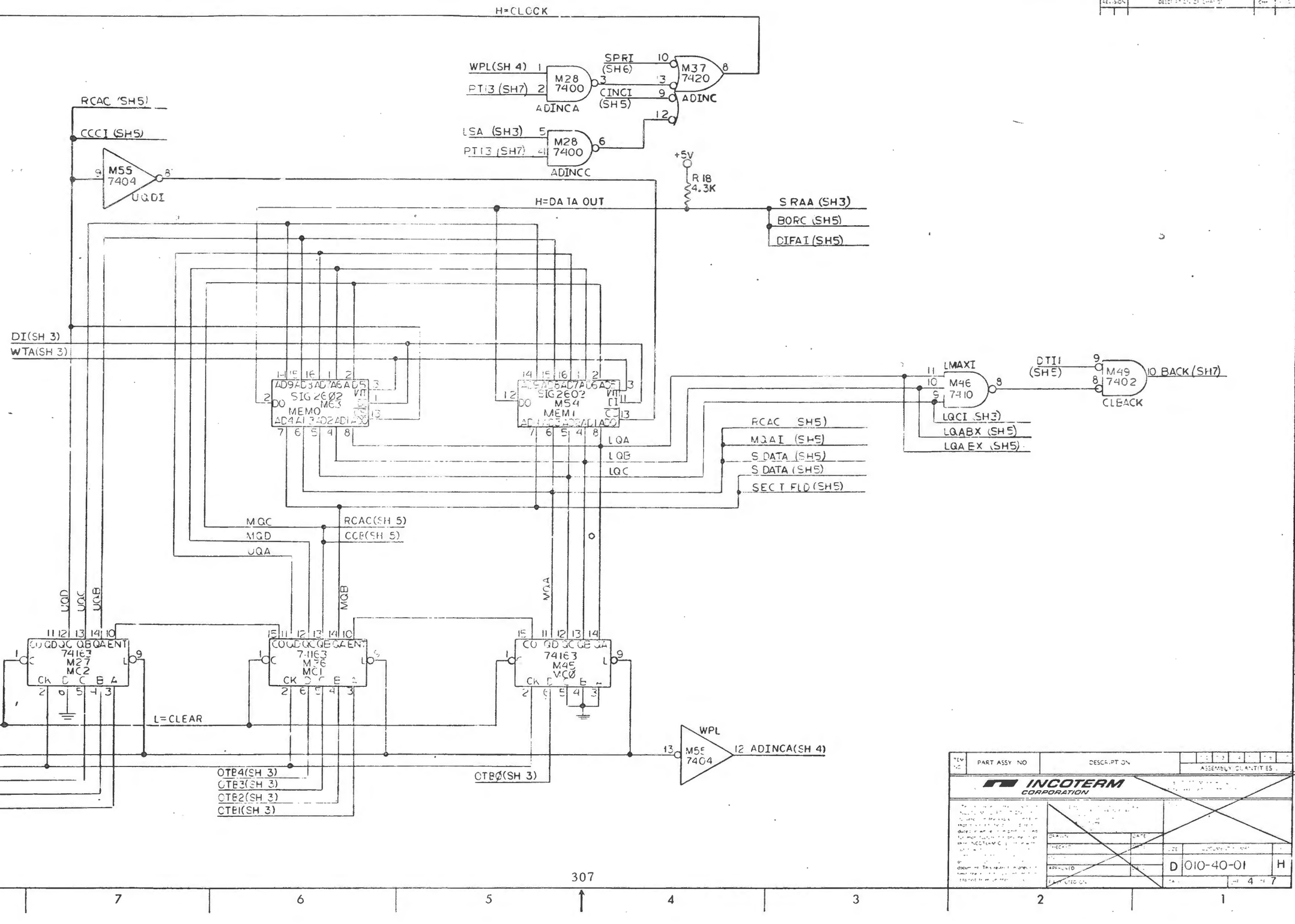
INCOTERM CORPORATION

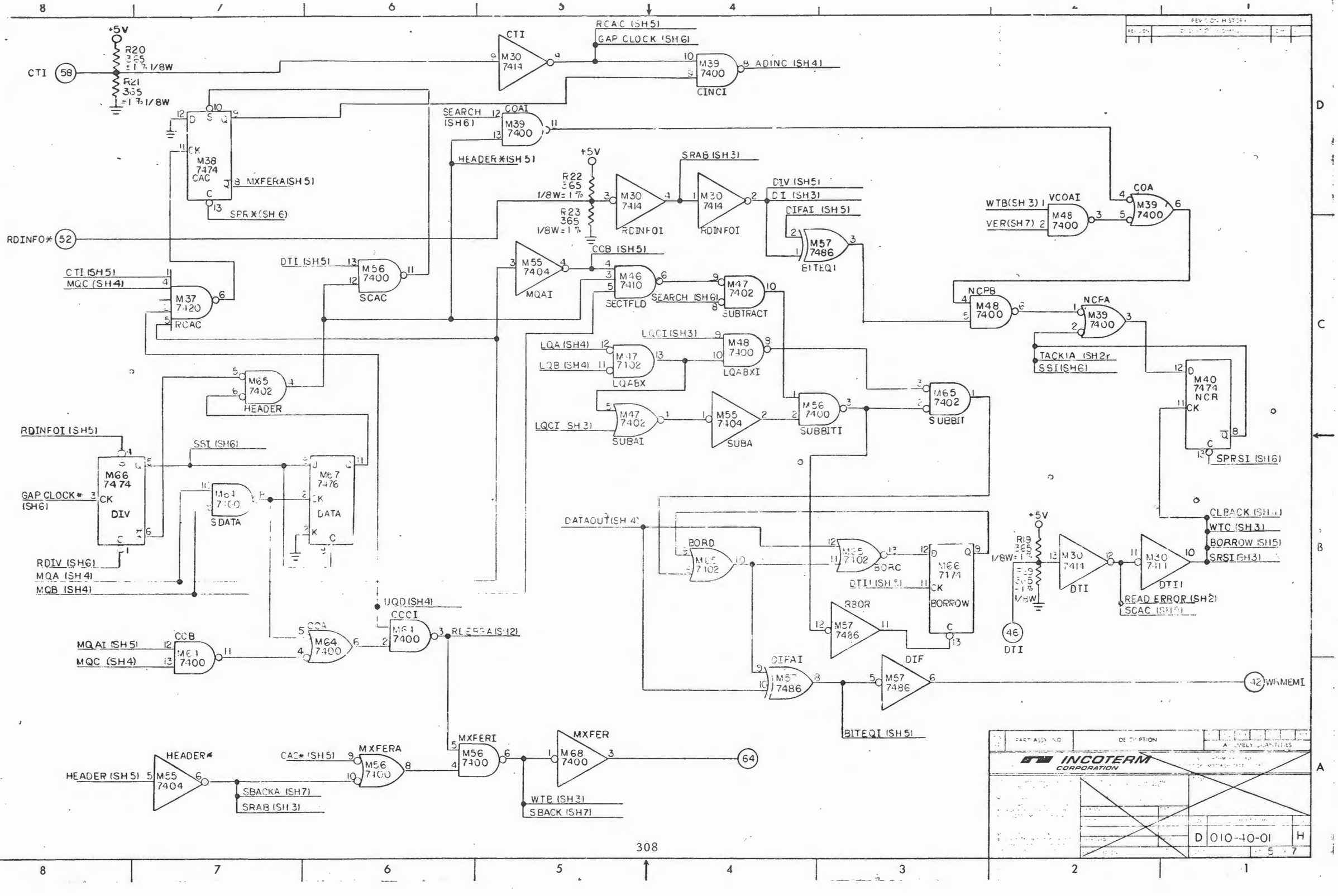
FLOPPY DISK CONTROLLER LOGIC DIAGRAMS

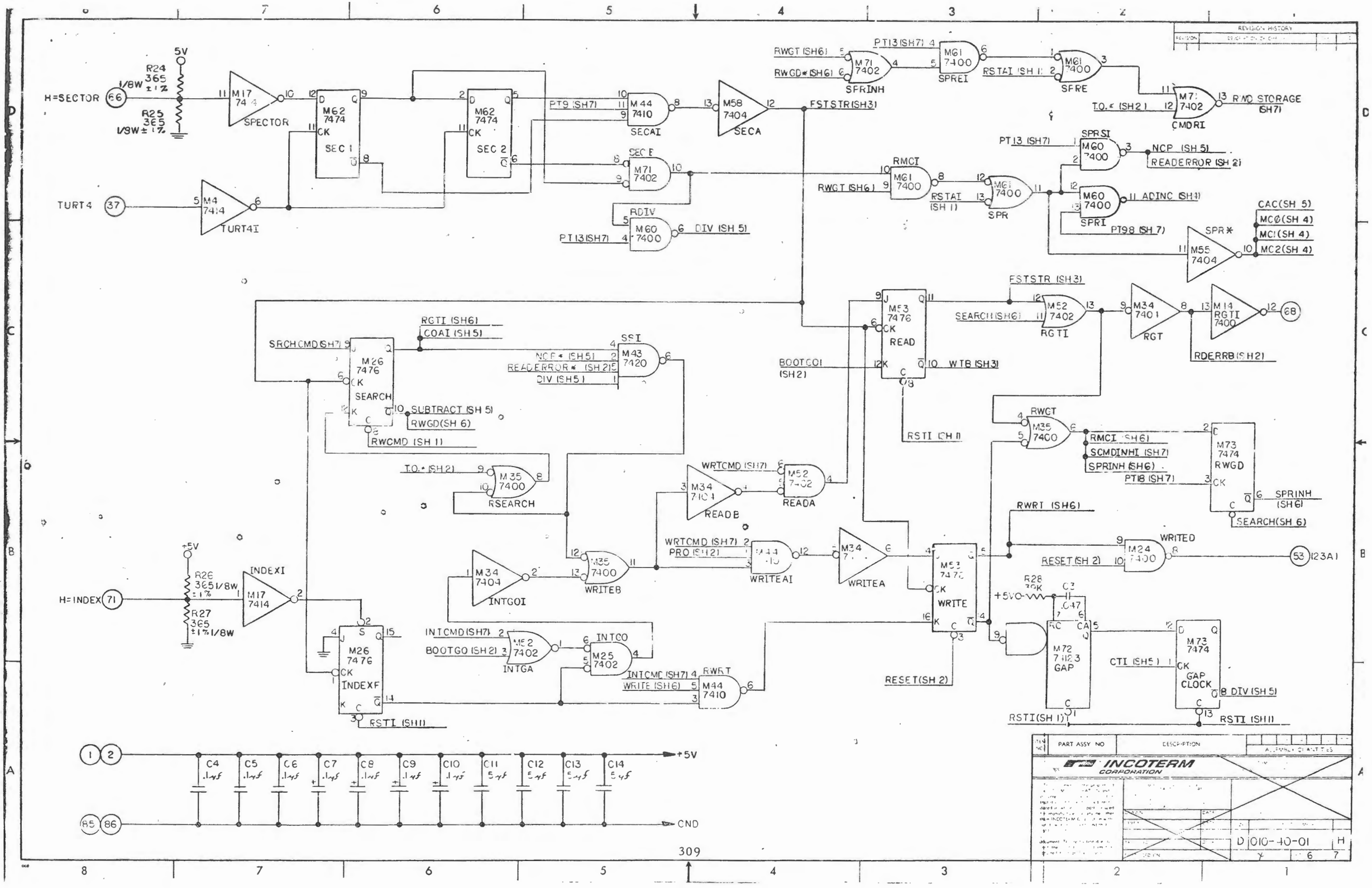
D 010-40-01 H

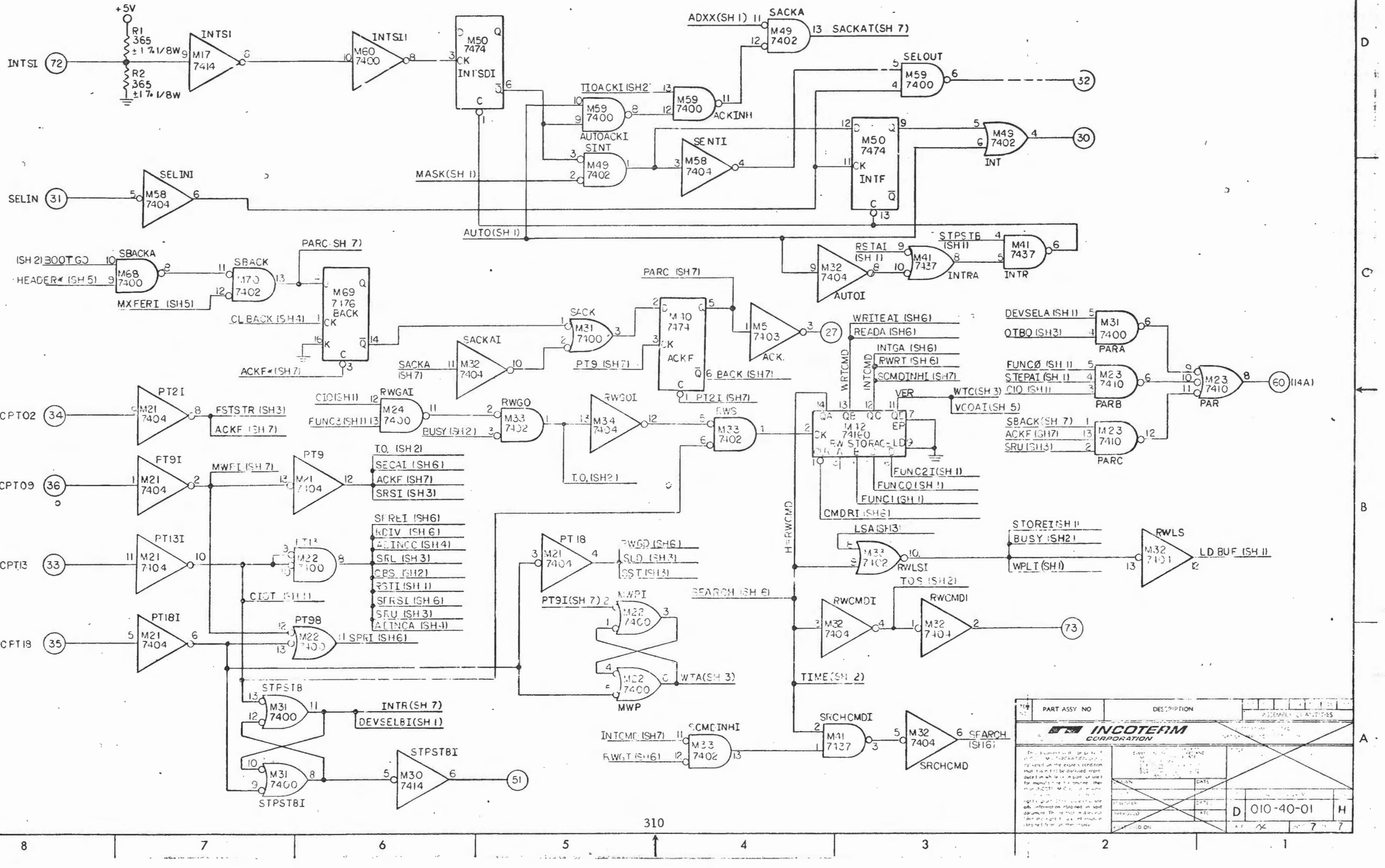

REVISION HISTORY
H=DEVICE BUSY
67
+5V
R5 365 1/8W ±1%
R6 365 1/8W ±1%
M17 7414
DEV BUSY I
TRKOI
65
(12A)
R7 365 ±1% 1/8W
R8 365 ±1% 1/8W
BUSY
M25 7402
RWLSI (SH 7)
RWGO (SH 7)
TACKA I
M8 7402
FUNCDEC 4I (SH1)
TACKBI
FUNCDEC 5I (SH1)
TACKA
TACK
M43 7420
H=ACK
TIOI (SH 1)
TIOACK
M52 7402
TIOACKI
M58 7404
ACK INH (SH 7)
H=DEV ERROR
63
(15A)
R11 365 1/8W
R12 365 1/8W ±1%
TACK2
FUNCDEC 2I (SH1)
M16 7402
TACKC
FUNCDEC 8I (SH 1)
TACK 8
WRITE AI (SH6)
L=PROTECT
62
R13 365 ±1% 1/8W
R14 365 ±1% 1/8W
M17 7414
PRO
FUNCDEC 3I(SH115
TACK 3I
M8 7402
H=ACK
TACK B
M25 7402
FUNCDEC 6I (SH 1)
M16 7402
TACK 6
+5V
R17 47K
C2 33 uf
RC
CA
Q
M72 74123 TIME
RWCMD (SH7)
RWCMDI (SH7)
TOS
M71 7402
PT9 (SH7)
RWGO (SH7)
M51 7476
T.O
CMDRI (SH6)
RSEARCH (SH6)
RSTI (SH 1)*
CIO BOOT (SH 1)
PT 13 (SH7)
DEV SELA1 (SH 1)
CBS
FUNCDEC 1I (SH 1)
M16 7402
TACK 1
M34 7404
TACKD
NCR* (SH5)
M68 7400
TACKIA
75
+14V
R10 680 OHM 1/4W
R9 220 OHM 1/4 W
C1 .1uf
WRITE(SH 6)
WRITED (SH 6)
SBACKA (CH7)
INTCA (SH6)
SRSI (SH 3)
SRAB (SH3)
READ ERROR
M69 7476
DTI (SH5)
SSI (SH6)
SPRSI (SH6)
CCCI (SH5)
M70 7402
RDERRA
RDERRB
RGI (SH6)
M35 7400
+5V
R31 365 1/8W ±1%
R30 365 1/8W ±1%
BOOT GO
77
M4 7414
BOOT GO
M5 7403
BOOT STRAP
CBA (SH 1)
29
M19 7404
BOOT GOI
READ (SH6)
SRAA (SH3)
RIO (SH3)
SST (SH3)
XFDBKI
84
R15 365 ±1% 1/8W
R16 365 ±1% 1/8W
M17 7414
XFDBK
PART ASSY NO
DESCRIPTION
INCOTERM CORPORATION
D
C10-40-01
H
305


INB07
INB06
INB05
INB04
INB03
INB02
INB01
INB00
SR7
SR6
SR5
SR4
SR3
SR2
SR1
RIOI (SH11)
BOOTGOI (SH2)
RIO
DATA OUT (SH4)
SRAA
SRA
SRAB
RDINFOI (SH5)
HEADER* (SH5)
LD BUF (SH1)
FARC (SH7)
LOAD CMD (SH3)
SRO
LIDI
DI
MEMØ (SH4)
MEM1 (SH4)
RDINFOI (SH5)
PT 13 (SH7)
OTB07
OTB06
OTB05
OTB04
OTB03
OTB02
OTB01
OTB00
MC2 (SH4)
MC1 (SH4)
MCØ (SH4)
PARA (SH7)
SLD
PT18 (SH7)
LQC (SH4)
LQCI
SUBAI (SH5)
STACT (SH3)
LQA8X1 (SH5)
RSTI (SH1)
LIDI (SH3)
WTA (SH3)
RWLSI (SH7)
ADINCC (SH4)
LSA
PT9 (SH7)
M20
7451
SRSI
BOOT GO (SH2)
DTI1 (SH5)
STORE I (SH11)
SSTA
SST
BOOT GOI (SH2)
READ (SH6)
SECA (SH6)
FSTSTR
PT21 (SH7)
MEMØ (SH4)
MEM1 (SH4)
LQCI (SH3)
STACT
RSTI (SH1)
WTA
7451
M21
DTI1 (SH5)
VER (SH7)
VCOAI (SH5)
MXFERI (SH5)
READ* (SH6)
LOAD CMD (SH3)
MWP (SH7)
PART ASSY NO
DESCRIPTION
INCOTERM
CORPORATION
D 010-40-01 H
306


H=CLOCK
WPL(SH 4)
PTI3 (SH7)
M28 7400
ADINCA
SPRI (SH6)
CINCI (SH5)
M37 7420
ADINC
LSA (SH3)
PTI3 (SH7)
M28 7400
ADINCC
RCAC (SH5)
CCCI (SH5)
M55 7404
UQDI
+5V
R 18 4.3K
H=DATA OUT
S RAA (SH3)
BORC (SH5)
DIFAI (SH5)
DI(SH 3)
WTA(SH 3)
MEMO
SIG 2602
M53
MEM1
SIG 2602
M54
LQA
LQB
LQC
RCAC SH5)
MQAI (SH5)
S DATA (SH5)
S DATA (SH5)
SECT FLD (SH5)
LMAXI
M46 7410
LQCI (SH3)
LQABX (SH5)
LQAEX (SH5)
DTII (SH5)
M49 7402
CLBACK
IO BACK (SH7)
MQC
MQD
UQA
RCAC(SH 5)
CCB(SH 5)
UQD
UQC
UQB
MQB
MQA
74163
M27
MC2
74163
M56
MC1
74163
M45
VCO
SPR*(SH 6)
L=CLEAR
WPLI(SH 7)
WPL
M5E 7404
12 ADINCA(SH 4)
OTB7(SH 3)
OTE6(SH 3)
OTE5 (SH 3)
OTB4(SH 3)
OTB3(SH 3)
OTB2(SH 3)
OTBI(SH 3)
OTBØ(SH 3)
REVISION HISTORY
INCOTERM CORPORATION
D 010-40-01 H
307

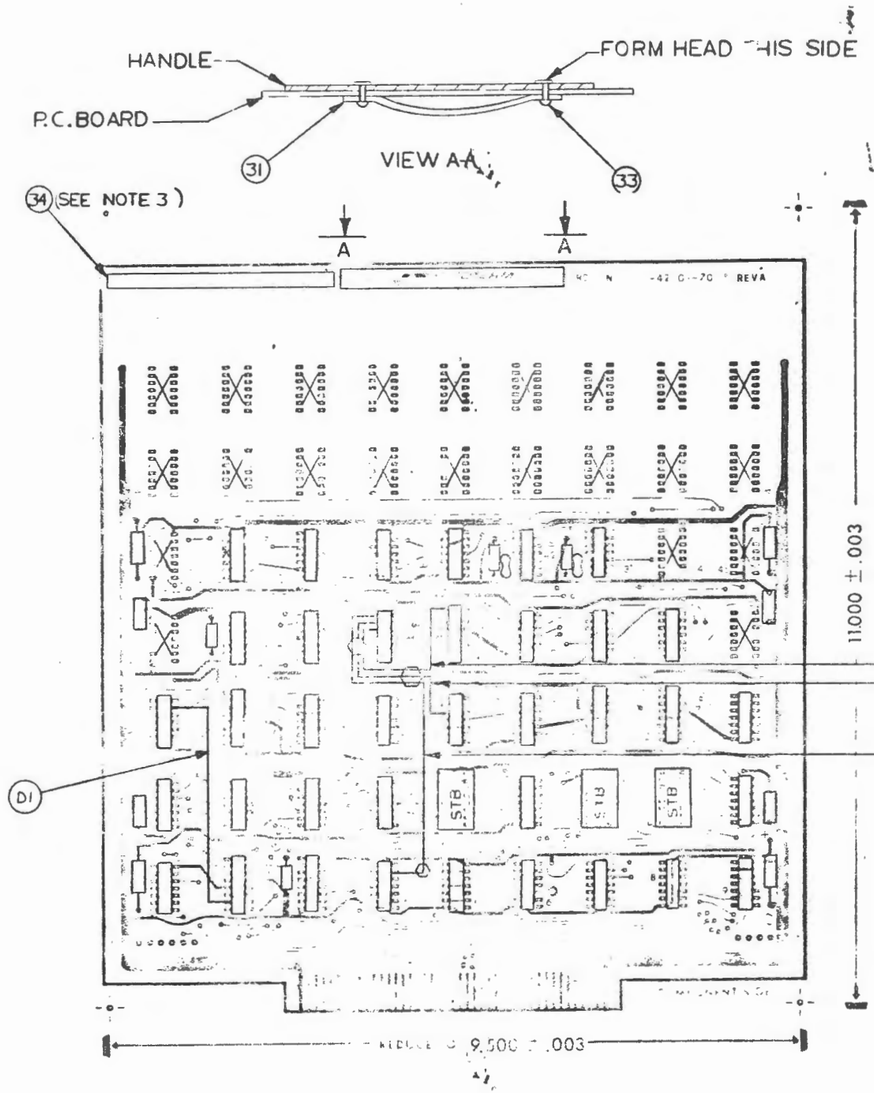

+5V
R20 365 ±1% 1/8W
CTI (58)
R21 365 ±1% 1/8W
CTI
M30 7414
RCAC (SH5)
GAP CLOCK (SH6)
M39 7400
CINCI
ADINC (SH4)
SEARCH (SH6)
COAI
M39 7400
HEADER*(SH5)
M38 7474 CAC
MXFERA(SH5)
SPR*(SH6)
RDINFO* (52)
R22 365 1/8W=1%
R23 365 1/8W=1%
M30 7414
RDINFOI
SRAB (SH3)
DIV (SH5)
DI (SH3)
DIFAI (SH5)
M57 7486
BITEQI
WTB(SH3)
VER(SH7)
VCOAI
M48 7400
COA
M39 7400
CTI (SH5)
MQC (SH4)
M37 7420
RCAC
DTI (SH5)
M56 7400
SCAC
M55 7404
MQAI
CCB (SH5)
M46 7410
SECTFLD
SEARCH (SH6)
M47 7402
SUBTRACT
NCPB
NCPA
M48 7400
M39 7400
TACKIA (SH2)
SSI(SH6)
M40 7474 NCR
SPRSI (SH6)
LQA (SH4)
LQB (SH4)
M47 7402
LQABX
LQCI(SH3)
M48 7400
LQABXI
LQCI (SH3)
SUBAI
M55 7404
SUBA
M56 7400
SUBBITI
M65 7402
SUBBIT
RDINFOI (SH5)
SSI (SH6)
M66 7474 DIV
M67 7476 DATA
M61 7400
SDATA
GAP CLOCK* (SH6)
RDIV (SH6)
MQA (SH4)
MQB (SH4)
DATAOUT(SH4)
BORD
M65 7402
BORC
M66 7474 BORROW
DTI(SH5)
R8OR
M57 7486
DIFAI
M57 7486
DIF
M57 7486
BITEQI (SH5)
+5V
R19 365 1/8W=1%
M30 7414
DTI
M30 7411
DTI
46
DTI
CLBACK (SH4)
WTC (SH3)
BORROW (SH5)
SRSI (SH3)
READ ERROR (SH2)
SCAC (SH3)
42 WRMEMI
UQD(SH4)
CCCI
M61 7400
RLERRA (SH12)
CCA
M64 7400
CCB
M61 7400
MQAI (SH5)
MQC (SH4)
HEADER*
M55 7404
HEADER (SH5)
SBACKA (SH7)
SRAB (SH3)
CAC* (SH5)
MXFERA
M56 7400
MXFERI
M56 7400
MXFER
M68 7400
64
WTB (SH3)
SBACK (SH7)
HEADER
M65 7402
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
D 010-40-01 H
5 7

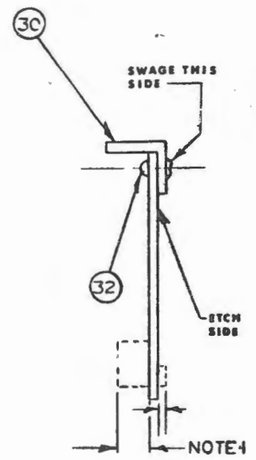

REVISION HISTORY
H=SECTOR
66
5V
R24 365 1/8W ±1%
R25 365 1/8W ±1%
M17 7414 SPECTOR
M62 7474 SEC 1
M62 7474 SEC 2
TURT4
37
M4 7414 TURT4I
PT9 (SH7)
M44 7410 SECAI
M58 7404 SECA
FSTSTR(SH3)
SEC F
M71 7402
RDIV
M60 7400
PT13(SH7)
DIV (SH 5)
RWGT (SH6)
RWGD* (SH6)
PT13(SH7) 4
M71 7402 SPRINH
M61 7400 SPREI
RSTAI (SH 1)
M61 7400 SPRE
TO.* (SH2)
M71 7402 CMDRI
RMD STORAGE (SH7)
PT13 (SH7)
SPRSI
M60 7400
NCP (SH 5)
READERROR (SH 2)
RMCI
M61 7400
RWGT (SH6)
RSTAI (SH 1)
M61 7400 SPR
M60 7400 SPRI
11 ADINC (SH1)
PT9B (SH 7)
SPR*
M55 7404
CAC(SH 5)
MC0(SH 4)
MC1(SH 4)
MC2(SH 4)
FSTSTR (SH3)
M53 7476 CK READ
SEARCH(SH6)
M52 7402 RGTI
M34 7401 RGT
M14 RGTI 7400
68
RDERRB(SH2)
BOOTCOI (SH2)
10 WTB (SH3)
RSTI (SH 1)
RWCT
M35 7400
RMCI (SH6)
SCMDINHI (SH7)
SPRINH (SH6)
PT18 (SH7)
M73 7474 RWGD
6 SPRINH (SH6)
SEARCH(SH 6)
SRCHCMD(SH7)
M26 7476 SEARCH
RGTI (SH6)
COAI (SH5)
SSI
M43 7420
NCP* (SH5)
READERROR* (SH2)
DIV (SH5)
SUBTRACT (SH 5)
RWGD(SH 6)
RWCMD (SH 1)
TO.* (SH2)
M35 7400 RSEARCH
WRTCMD (SH7)
M34 7404 READB
M52 7402 READA
WRTCMD (SH7)
PRO (SH12)
M44 7410 WRITEAI
M34 7404 WRITEA
M53 7476 CK WRITE
RWRT (SH6)
WRITED
M24 7400
RESET (SH 2)
53 (23A1)
R28 39K
C3 .047
+5VO
M72 7413 GAP
CTI (SH5) 1
M73 7474 GAP CLOCK
8 DIV (SH 5)
RSTI (SH1)
RSTI (SH1)
M34 7404 INTGOI
M35 7400 WRITEB
INTCMD(SH7)
BOOTGO (SH2) 3
M52 7402 INTGA
M25 7402 INTCO
INTCMD (SH7) 4
WRITE (SH6) 5
M44 7410 RWRT
M26 7476 INDEXF
INDEXI
H=INDEX
71
+5V
R26 365 1/8W ±1%
R27 365 ±1% 1/8W
M17 7414
RSTI (SH1)
1 2
C4 .1uf
C5 .1uf
C6 .1uf
C7 .1uf
C8 .1uf
C9 .1uf
C10 .1uf
C11 5uf
C12 5uf
C13 5uf
C14 5uf
+5V
85 86
GND
PART ASSY NO
DESCRIPTION
INCOTERM CORPORATION
D 010-40-01 H
309

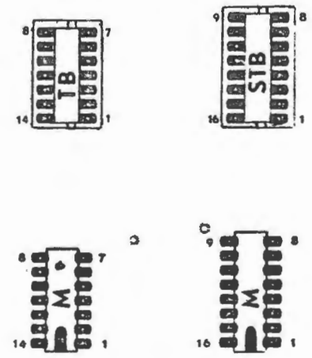

REVISION HISTORY
+5V
R1 365 ±1% 1/8W
R2 365 ±1% 1/8W
INTSI
INTSI (72)
M17 7414
INTSI1
M60 7400
M50 7474 INTSDI
SACKA
ADXX(SH 1)
M49 7402
SACKAT(SH 7)
SELOUT
M59 7400
32
TIOACKI (SH2)
M59 7400
ACKINH
AUTOACKI
SINT
M49 7402
SENTI
M58 7404
MASK(SH 1)
M50 7474 INTF
M49 7402
INT
30
SELINI
SELIN (31)
M58 7404
AUTO(SH 1)
STPSTB (SH1)
M41 7437
INTR
RSTAI (SH 1)
M41 7437
INTRA
M32 7404
AUTOI
(SH 2) 300TGO
HEADER* (SH 5)
SBACKA
M68 7400
MXFERI (SH5)
SBACK
M70 7402
PARC (SH 7)
M69 7176 BACK
CL BACK (SH4)
ACKF* (SH 7)
SACK
M31 7400
PT9 (SH7)
M10 7474 ACKF
6 BACK (SH7)
1 PT2I (SH7)
M5 7403
ACK.
27
PARC (SH7)
SACKA (SH 7)
M32 7404
SACKAI
WRITEAI (SH6)
READA (SH6)
INTGA (SH6)
RWRT (SH 6)
SCMDINHI (SH7)
VER
WTC(SH 3)
VCOAI(SH 5)
DEVSELA (SH 1)
QTBO (SH3)
M31 7400 PARA
FUNCØ (SH 1)
STEPAI (SH 1)
CIO (SH 1)
M23 7410 PARB
M23 7410 PAR
60 (114A)
SBACK (SH 7)
ACKF (SH7)
SRU (SH3)
M23 7410 PARC
PT2I
CPT02 (34)
M21 7404
FSTSTR (SH3)
ACKF (SH 7)
CIO(SH1)
RWGAI
FUNC3(SH1) 13
M24 7400
BUSY (SH2)
RWGO
M33 7402
RWGOI
M34 7404
RWS
M33 7402
T.O. (SH2)
M12 74160 R/W STORAGE-LOG
FUNC2I(SH 1)
FUNCOI(SH 1)
FUNCI (SH 1)
CMDRI (SH6)
H=RWCMD
PT9I
CPT09 (36)
M21 7404
MWFI (SH 7)
PT9
M21 7404
T.O. (SH2)
SECAI (SH6)
ACKF (SH7)
SRSI (SH3)
SERRI (SH6)
RDIV (SH 6)
ADINCC (SH4)
SRL (SH3)
CBS (SH2)
R3TI (SH 1)
SERSI (SH 6)
SRU (SH3)
ADINCA (SH4)
PT13I
CPT13 (33)
M21 7404
PT13
M22 7400
CIOT (SH1)
PT18I
CPT18 (35)
M21 7404
PT98
M22 7400
SPRI (SH6)
PT18
M21 7404
RWGD (SH6)
SLD (SH3)
SST (SH3)
PT9I(SH 7)
M.WPI
M22 7400
MWP
WTA(SH 3)
SEARCH (SH 6)
LSA (SH3)
M33 7402
RWLSI
STOREI (SH 1)
BUSY (SH2)
WPLI (SH 1)
RWLS
M32 7401
LD BUF (SH 11)
T.O.S (SH2)
RWCMDI
M32 7404
RWCMDI
M32 7404
73
TIME(SH 2)
STPSTB
M31 7400
INTR (SH 7)
DEVSELBI(SH 1)
STPSTBI
M31 7400
STPSTBI
M30 7414
51
INTCMD (SH7)
RWGT (SH6)
SCMDINHI
M33 7402
SRCHCMDI
M41 7437
M32 7404
SRCHCMD
SEARCH (SH16)
PART ASSY NO
DESCRIPTION
INCOTERM CORPORATION
D 010-40-01 H
310

ADD JUMPER WIRE (ITEM 29)	
A1	FROM M32-9 TO M31-10
B1	" M31-9 TO M23-10
C1	" M31-8 TO M4-6
D1	" M19-6 TO M2-15

REVISION HISTORY				
REVISION		DESCRIPTION	DATE	CHK
A		RELEASED / RD#628		
	A1	REV. CHANGE ONLY / ECO 2475		
	A2	REV. CHANGE ONLY / ECO 2477		
	A3	REVISED / ECO 2488		
B		REVISED / ECO 2493		
	B1	REVISED / ECO 2687		
C		REVISED / ECO 3352		
	C1	REV CHG / ECO 3411 9-10-74		
	C2	REVISED / ECO 3453		







PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
28	C5-6
27	C7-8-9-10
26	C1-2-3-4
25	•
24	R1
23	R4
22	R2-3
21	
20	STB 14-16-17
19	M42-43
18	M2-20-32
17	M25-26
16	M22-39
15	M3
14	M6-7-8
13	M27
12	M4-18
11	M13-33
10	M1-5-11-12-23-34-35
9	M29
8	M10-15-19-21-31-38-41
7	M9-24-36-40
6	
5	
4	
3	
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. 'X' INDICATES NO COMPONENTS.
3. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 34, AND MARK ASSY. NO. 010-42-02-701 AND LATEST ASSY. REVISION.
4. FASTEN JUMPER WIRE (ITEM 29) TO BOARD, USING GLUE (ITEM 25) IN PLACES MARKED (○).

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-42-03-701 REV. A

701A

ITEM NO.	PART NO.	DESCRIPTION	QTY.
2	010-42-03-701	ARTWORK ASSY (REV A)	1
~~29~~	~~245-02-02-(C)~~	~~WIRE #24GA SOLID WHITE~~	~~2.5"~~
~~25~~	~~MELTUE~~	~~HOT MELT GLUE THERMOGRIP~~	~~.2"~~

INCOTERM CORPORATION — Hayes Memorial Drive, Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2

DR [illegible] 6/11/73
CHK [illegible] 6/11/73
ENG [illegible] 7/11/73
APVD [illegible]
NEXT ASSY 010-IC-CC

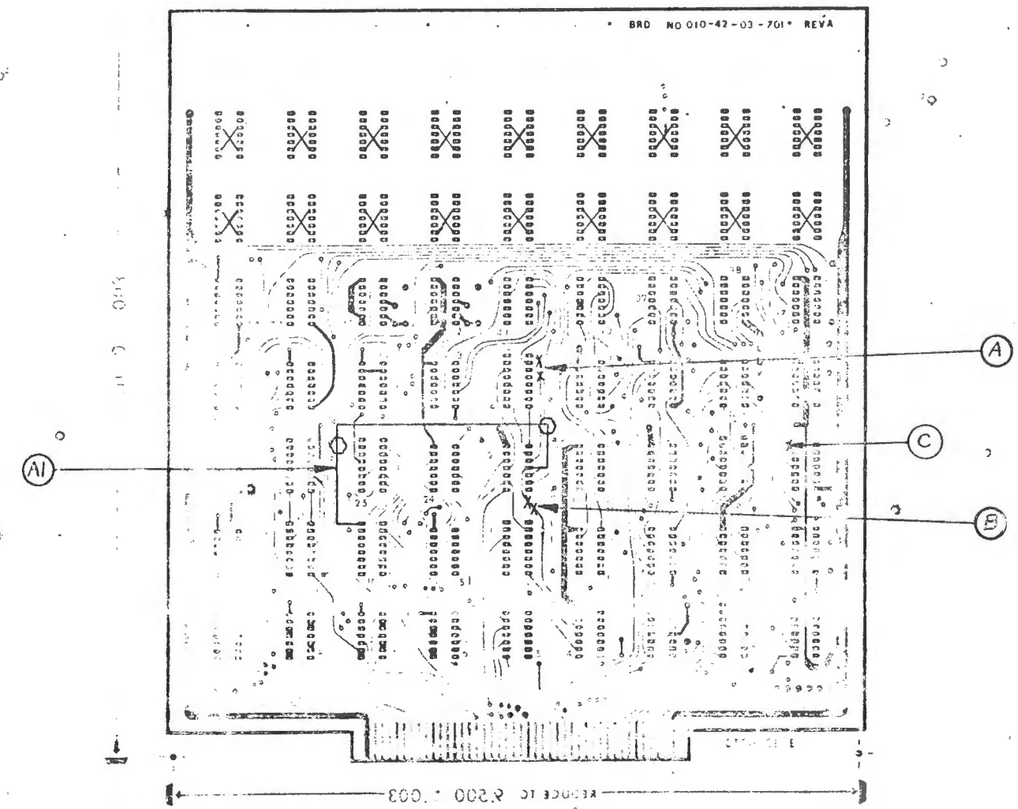
TITLE: P.C. BOARD ASSY PARALLEL PRINTER INTERFACE BOARD (7 BIT DATA PRINTERS)

SIZE	P C	S S	NO.	REV
D	010-42-02			C2

SCALE 1:1 SHT 1 OF 5

CUT ETCH AT	
A	M23-10 TO M32-9
B	M4-6 TO M23-11
C	M19-6 TO EYELET

ADD JUMPER WIRE (ITEM 29)	
A1	M16-8 TO M23-11



ASSEMBLE WITH ARTWORK 010-42-03-701 REV. A

701A

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

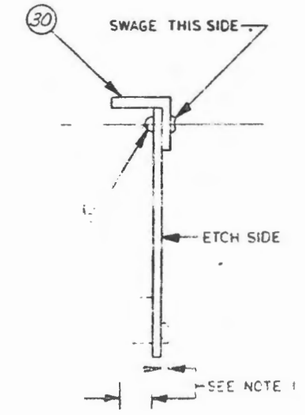
UNLESS OTHERWISE STATED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .005 (PLUS) ANGLES 2 .02 (PLUS)

TITLE: P.C. BOARD ASSY. PARALLEL PRINTER INTERFACE BOARD (7 BIT DATA PRINTERS)

SIZE	P.C.	S.S.	NO	REV
D	010 42-02			C.2

NEXT ASSY 010-10-55 | SCALE 1:1 | SHT 2 OF 5

ADD JUMPER WIRE (ITEM 29)
AT MID-C TO ME-



REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APVD

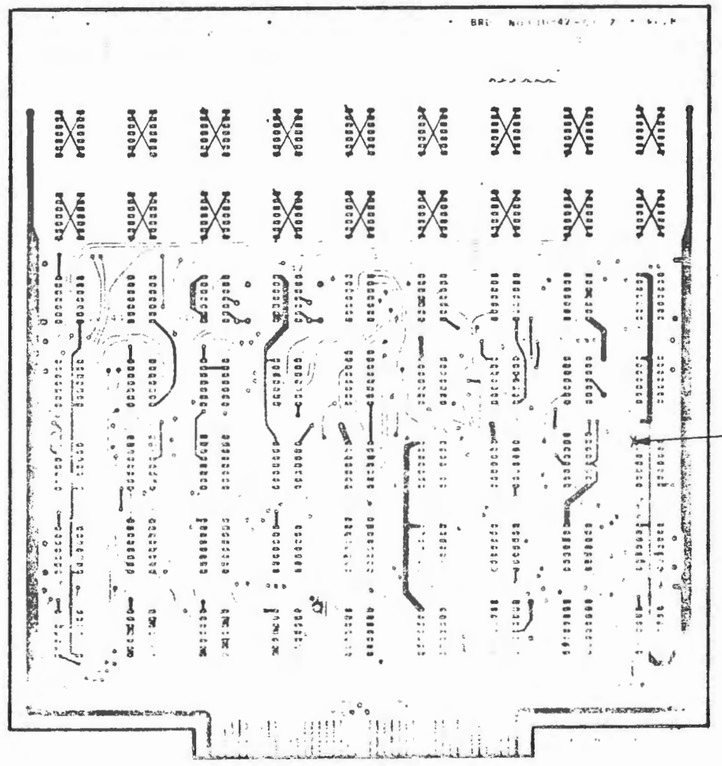
ORIENTATION

COMPONENT SIDE

ASSEMBLE WITH ARTWORK C10-42-03-701 REV B

CUT ETCH FROM	
A	M19-5 TO EYELET

REVISION HISTORY			
B	REDRAWN/ECO	4	4



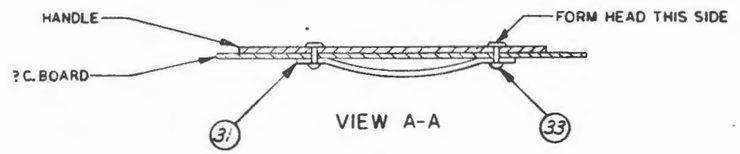
A

ETCH SIDE

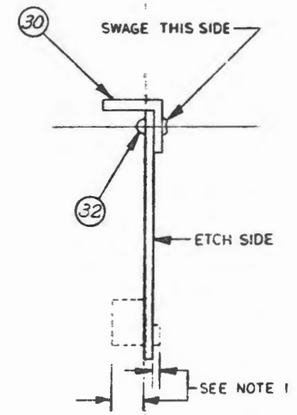
ASSEMBLE WITH ARTWORK 010-42-03-701 REV B

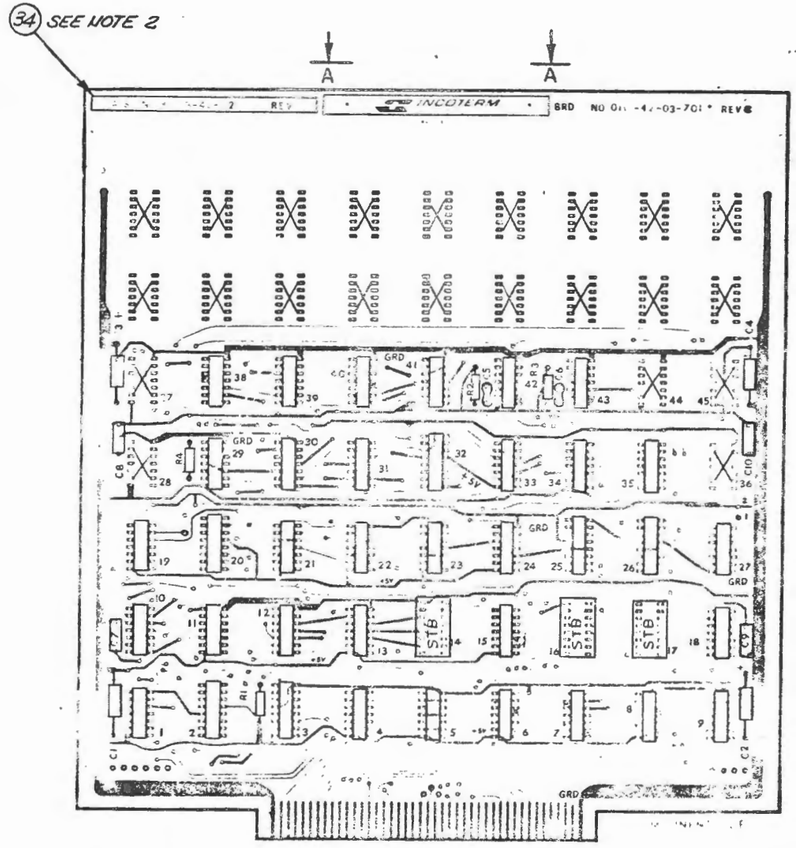
INCOTERM CORPORATION		P.C. BOARD ASSY (70IT DATA PRINTER) PARALLEL PRINTER INTERFACE BOARD -70
Mike Durkee		
010-42-02	D	010-42-02 C2
	1/1	4 5

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APP'D
D	REV/ECO 3453 (7-25-79)		



VIEW A-A





PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
28	C5, 6
27	C7, 8, 9, 10
26	C1, 2, 3, 4
25	
24	R1
23	R4
22	R2, 3
21	
20	STB14, 16, 17
19	M42, 43
18	M2, 20, 32
17	M25, 26
16	M22, 39
15	M3
14	M6, 7, 8
13	M27
12	M4, 18
11	M13, 33
10	M1, 5, 11, 12, 23, 34, 35
9	M29
8	M10, 15, 19, 21, 31, 38, 41
7	M9, 24, 30, 40
6	
5	
4	
3	
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN. REVISION LABEL ITEM 34, AND MARK ASSY. NO. 010-42-02-701 AND LATEST ASSY. REVISION.

ASSEMBLE WITH ARTWORK 010-42-03-701 REV C

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

		P.C. BOARD ASSY PARALLEL PRINTER INTERFACE BOARD (7BIT DATA PRINTER) 701
	9-21-78	
		D 010-42-02 C2
	010-10-00	1:1 SHT 5 OF 5

315

8 7 6 5 4 3 2 1

D C B A

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APP'D
C1	REDRAWN/ECO 2811		
D	REVISED/ECO 3352		

+5V
R1 1K

ADDXX (28)
TYPØØ (19)
TYPØ1 (21)
7442 M3 IODEC
1 L=WIO
3 L= CIO
4 L=TIO
TIOER (SH1)

WIOT 2 (SH2)
RESRED (SH2)
DASTRB (SH3)
WIOI 7404 M12
WCSTRB (SH3)
FUDGE (SH2)

CIOCP 7402 M21
CPI13 (SH3) 12
RD/WRT (SH1)
MASK (SH1)

CIOI 7404 M1
CIORST (SH2)
CCSTRB (SH3)
CIOØ (SH2)

TIOI 7404 M12

FUD4 (SH1)
7476 M20 NACK
NRED (SH2)
SELIN (SH2)
RESRED (SH2)

RESET (SH2)
FUD3 (SH1)
CIOCPI3 (SH1)
FUD2 (SH1) 16
7476 RD/WRT M2
INNACK (SH 2)
MASK * (SH1) 13
UMWT 7400 M9
INHACK (SH1)
UMWT I (SH2)
UMRE (SH2)

ACK 7403 M29
27

ERINT (SH2)
CPT9 (SH3)
ERACK 7410 M33

WACK 7400 M30
READY (SH2)
GTBG (SH2)

INNACK 7402 M19
RD\WRT (SH1) 6
WACKEN 7437 M7
STB-16
SACK 7400 M30
7474 M39 ACKF
CPT9 (SH3) 11
CPT2 (SH3)

TACK 7400 M30
+5V
R4 820Ω 1/4 W
TIØ1 7403 M29
TIØ2 7403 M29
FUD1 (SH1)
READY * (SH2)
FUD2 (SH1)

FUNCØØ (20)
FUØH 7404 M11
FUØL 7404 M1
FUD 3 7402 M10
RD/WRT (SH1)
FUDØ (SH3)

FUNCØ1 (22)
FU1H 7404 M11
FU1L 7404 M1
FUD 1 7402 M10
FUDIL (SH1)
CIORST (SH2)
TIØ1 (SH1)
FUDØ (SH3)
FUD 2 7402 M10
TIØ2 (SH1)
RD WRT (SH1)

FUNCØ2 (24)
FU2H 7404 M11
FU2L 7404 M1
FUDØ (SH3)
FUDC 7402 M10
MASK (SH1)

FUNCØ3 (26)
FU3H 7404 M11
FU3L 7404 M1
FUD 8 7402 M19
MASK (SH1)
FUDØ (SH3)
FUD 4 7402 M21
NACK (SH1)

TIO (SH1)
FUD1L 7404 M23
FUD1 (SH1) 5
TIOER 7402 M21
CLRER (SH2)

RESET (SH2)
FUDC (SH1) 9
7476 M20 MASK
CIOCPI3 (SH1) 6
FUD8 (SH1) 12
UMWT (SH1)

STB14
150
130
110
PRTVAL 7410 M13
VALDET (SH2)

NOTES:
1 UNLESS OTHERWISE SPECIFIED:
A ALL RESISTORS VALVES ARE IN OHMS AND ARE 1/4W. ±5%.
B ALL CAPACITORS VALUES ARE IN MICRO FARADS.
C ALL DIODE ARE IN4148.
2 THE FOLLOWING 10 PINS ARE PRE-ASSIGNED AND MUST BE USED FOR THE FUNCTIONS DESCRIBED ONLY:
A +5V PINS, 1,2. E. I/O PINS 3-37.
B GRD PINS, 85,86.
C -13V PINS, 81,82
D +14V PINS, 75,76.
3 .002-FOR 6 BIT DATA PRINTERS ONLY (CDC & DATA PRINTER ETC.)

HIGHEST REF. DES. USED			
		R	M
REF DES NOT USED			

PART ASSY NO	DESCRIPTION
01 702	

INCOTERM CORPORATION
PARALLEL PRINTER INTERFACE LOGIC DIAGRAM 001/002
DRAWN Tim Schellberg 7-26-78
CHECKED 12-13-78
APPD 12/13/78
SIZE D | DOC. NO. 010-42-01 | REV D
SCALE 1 3

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

NACK(SH1) 12 NRED 7402 M15 13
HOLD(SH2) 11

RELES (SH2)
120
140
160
STB-14
1 REDEC 7420 M4 6
2
4
5

8 RDYSET 7402 M31 10
9

STB-16
8
REDI 7404 M23
11 10

FUDØH (SH 3) 1 CIOØ 7400 M9 3
CIOI (SH 1) 2

NACK * (SH 1) 10 RESRED 7410 M13 8
IOC ECZ (SH 1) 11
9
L=WIO

CPT2 (SH 3) 6 CK
9 J Q 11
7476
M32
READY
12 K C Q 10

INTOR (SH 2)
WACK (SH 1)
WCSTRB (SH 3)
DASTRB (SH 3)
TIO2 (SH 1)

INTOR (SH 2) 12 UMRE 7402 M31 13
UMWT (SH 1) 11

SELI (SH 2) 3
2 D Q 6
7474
CK
M39
INT
C Q
1

4 CLRINT 7402 M41 5 6
RE I (SH 2)

10 WIOT2 7402 M41 9 8
CPI2 (SH 3)
WIO (SH 1)

5 INTG 7400 M40 6
4
9 INTXI 7404 M11 8
30 INTX

3 FUDGE 7400 M40 1 2
WIOI (SH 1)

UMRE (SH 2)
UMNR (SH 2)
4
7402 M31 INTOR
6 5 READY (SH 2)
ERACK (SH 1)

RESET 25

FUDI (SH 1) 4 CIORST 7400 M9 6
CIOI (SH 1) 5

9 ROG 7400 M9 8
10

CPT2 (SH 3) 9 RESET 7400 M24 8
10

MASK (SH 1)
RELES (SH 2)
RD WRT (SH 1)

UMWT (SH 1) 3 UMWTI 7404 M12 4

12 SELDIS 7400 M40 11
13

4 7400 M30 6 32 SELOUT
5

9 UMNR 7400 M40 8
INTOR (SH2) 10

INT (SH 2)

5 REI 7404 M11 6
CLRER (SH 2)
CLRNT (SH 2)

SELIN 31 SELI 7404 M12 2
NACK (SH 1) 1

WACK (SH 1) 2 GTBG 7402 M38 1
CPI2 (SH 3) 3

8 BGFF 7402 M38 10
9

STB-16
9

11 7402 M38 13
12
BGFF *

PRTVAL (SH 1) 2 D Q
CPT2 (SH 3) 3 CK 7474 M22 VALDET C 1
STB14-7

11 CK 7474 M22 ERINT C 13
Q 9
ERACK (SH 1)

TIOER (SH 1) 5 CLRER 7402 M21 4
REI (SH2) 6

STRBI (SH 3) 13 STRBII 7404 M12 12

HOLD
12 7400 M24 11 NREQ (SH2)
13

10
RESET (SH2) 13
STB 14 12 (SH 2) 12 7420 M18
ILLCHR (SH 3) 9 RELES

C5 680 µf R2 27K 1/4W +5V
C6 680 µf R3 27K 1/4W +5V

1 2 3 11 13 9601 M42 DELAY 6
1 2 4 3 11 13 9601 M43 TIMING Q 8

PRSTRB (SH3)
MASCLR (SH3)

STRBI (SH 3)
ILLCHR (SH3)

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

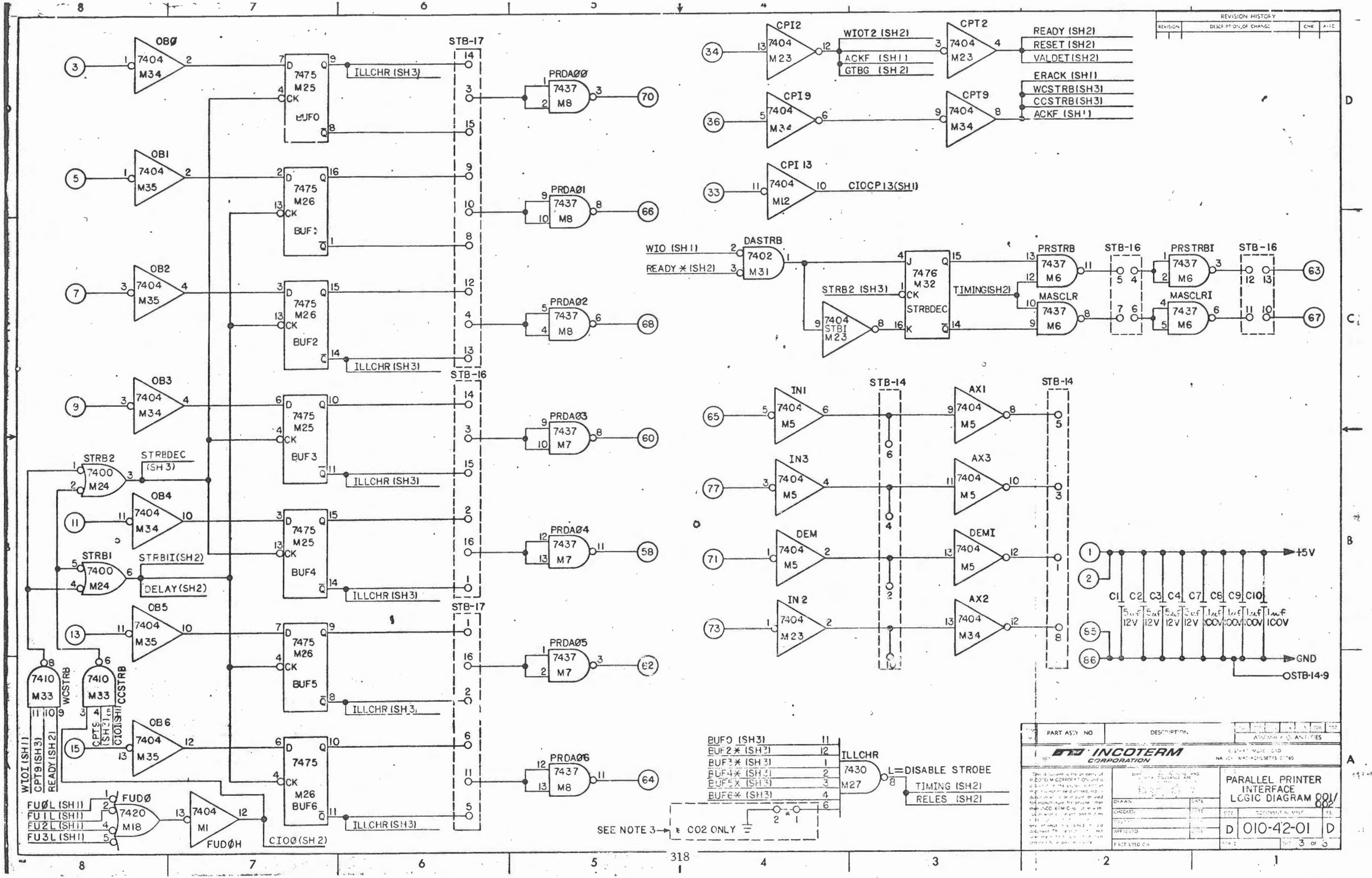
INCOTERM CORPORATION
8 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

PARALLEL PRINTER INTERFACE LOGIC DIAGRAM
001/002

DRAWN
CHECKED
SIZE D
DOCUMENT NO. C10-42-01
REV D
SCALE
SHEET 2 OF 3

317

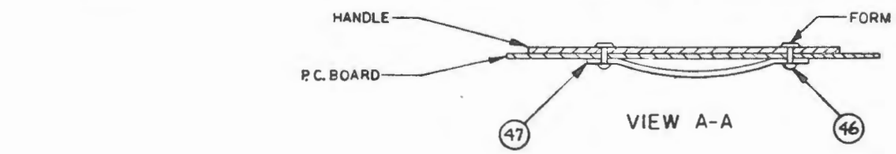
8 7 6 5 4 3 2 1


REVISION HISTORY
REVISION
DESCRIPTION OF CHANGE
CHK
APP'D
OB0
OB1
OB2
OB3
OB4
OB5
OB6
7404 M34
7404 M35
7475 M25
7475 M26
BUF0
BUF1
BUF2
BUF3
BUF4
BUF5
BUF6
STB-17
STB-16
ILLCHR (SH3)
PRDA00
PRDA01
PRDA02
PRDA03
PRDA04
PRDA05
PRDA06
7437 M8
7437 M7
STRB2
STRBDEC (SH3)
STRBI
STRBII(SH2)
DELAY(SH2)
7400 M24
7410 M33
WCSTRB
CCSTRB
WIOI (SH1)
CPT9(SH3)
READY (SH2)
FU0L (SH1)
FU1L (SH1)
FU2L (SH1)
FU3L (SH1)
FUD0
FUD0H
7420 M18
7404 M1
CIO0(SH2)
CPI2
CPT2
CPI9
CPT9
CPI 13
7404 M23
7404 M12
WIOT2 (SH2)
ACKF (SH1)
GTBG (SH2)
READY (SH2)
RESET (SH2)
VALDET(SH2)
ERACK (SH1)
WCSTRB(SH3)
CCSTRB(SH3)
CIOCPI3(SH1)
WIO (SH1)
READY * (SH2)
DASTRB
7402 M31
7476 M32
STRBDEC
STRB2 (SH3)
TIMING(SH2)
PRSTRB
PRSTRBI
MASCLR
7437 M6
STB-16
IN1
IN3
IN2
DEM
AX1
AX3
AX2
DEMI
7404 M5
STB-14
+5V
GND
STB-14-9
C1 C2 C3 C4 C7 C8 C9 C10
5uf 12V
1mf COV
BUF0 (SH3)
BUF2* (SH3)
BUF3* (SH3)
BUF4* (SH3)
BUF5X (SH3)
BUF6* (SH3)
ILLCHR
7430 M27
L=DISABLE STROBE
TIMING (SH2)
RELES (SH2)
SEE NOTE 3
* C02 ONLY
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
PARALLEL PRINTER INTERFACE LOGIC DIAGRAM 001/002
DRAWN
CHECKED
APPROVED
SIZE D
DOCUMENT NO. 010-42-01
REV D
SCALE
SHT 3 OF 5
318

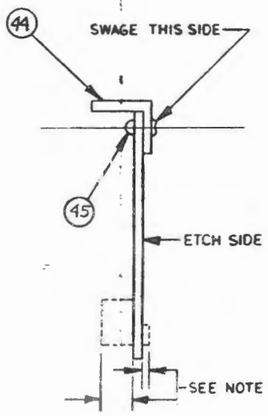
CUT ETCH FROM	
A1	I/O 81 TO M18-4
B1	I/O 75 TO EYELET
C1	M63-12 TO EYELET
D1	M39-9 TO M39-3

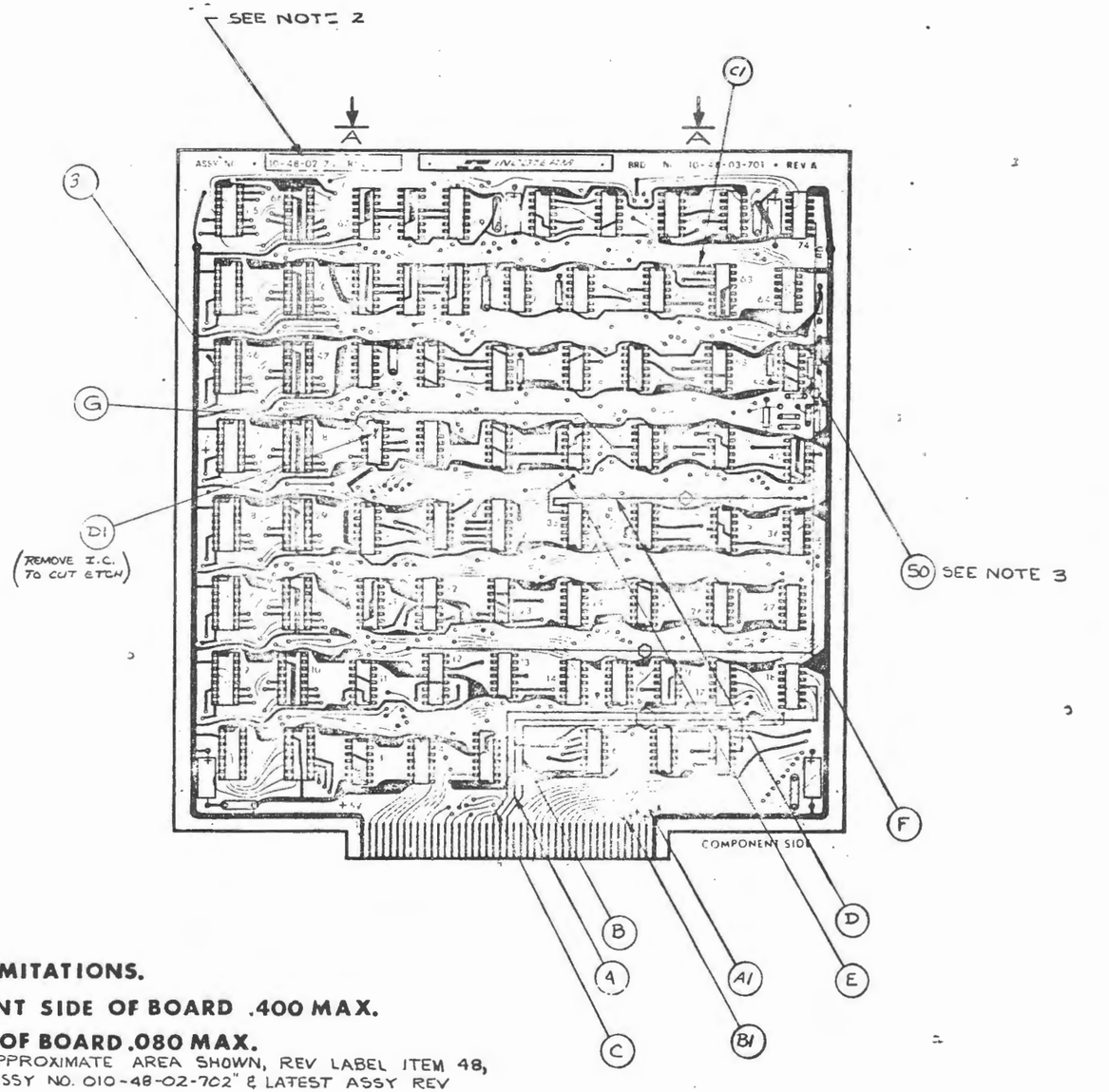
ADD WIRE (ITEM 49) FROM	
A	B-4 TO I/O 41
B	C-4 TO I/O 39
C	M40 TO EYELET
D	M28-8 TO EYELET
E	M28-9 TO EYELET
F	M74-3 TO EYELET
G	M28-8 TO M43-1

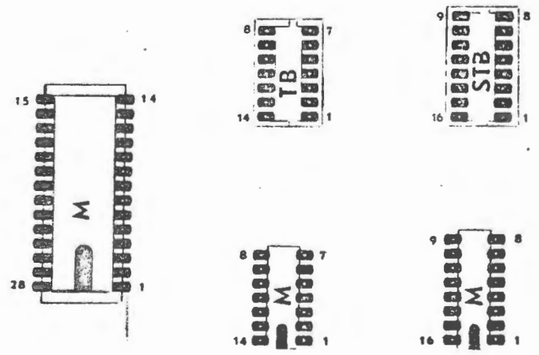
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
	1	ENG RELEASE		
A		RELEASED/RD#771		
B		REVISED/ECO 2743		
	B1	REVISED/ECO 2730 3/1/74		
C		REVISED/ECO 2856 4-1-74		
	C1	REV CHG ONLY/ECO 3850 2-4-75		
D		REVISED/ECO 3833 3-3-75		



VIEW A-A







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
38	R9
37	R2,4,5,6
36	R1,7,8,
35	
34	
33	
32	
31	-
30	
29	C11,13,14,15
28	C5,6,7,8,9,10
27	C1,2,3,4
26	
25	
24	M6,7
23	M1,2,9,10,19,20,28,29,37,38 46,47,55,56,65,66
22	M57,58,59,67,68,69
21	M21,30
20	M63
19	M12,22
18	M36,43,45,62
17	M5,32
16	M33
15	M8,17,18,27
14	M14,15,16
13	M35 39,53
12	M54,61
11	M4,13,31,34,40,70,72
10	M3,11,41,42,50
9	M23,25,44,52,74
8	M24,26,48,49,51,60,64,71,73
7	
6	
5	
4	
3	
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN, REV LABEL ITEM 48, AND MARK "ASSY NO. 010-48-02-702" & LATEST ASSY REV
3. ATTACH JUMPER WIRES, ITEM 49, USING GLUE, ITEM 50, TO BOARD IN APPROXIMATE AREAS MARKED ⬡.

ASSEMBLE WITH ARTWORK # 010-48-03-70, REV A

INCOTERM CORPORATION
8 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

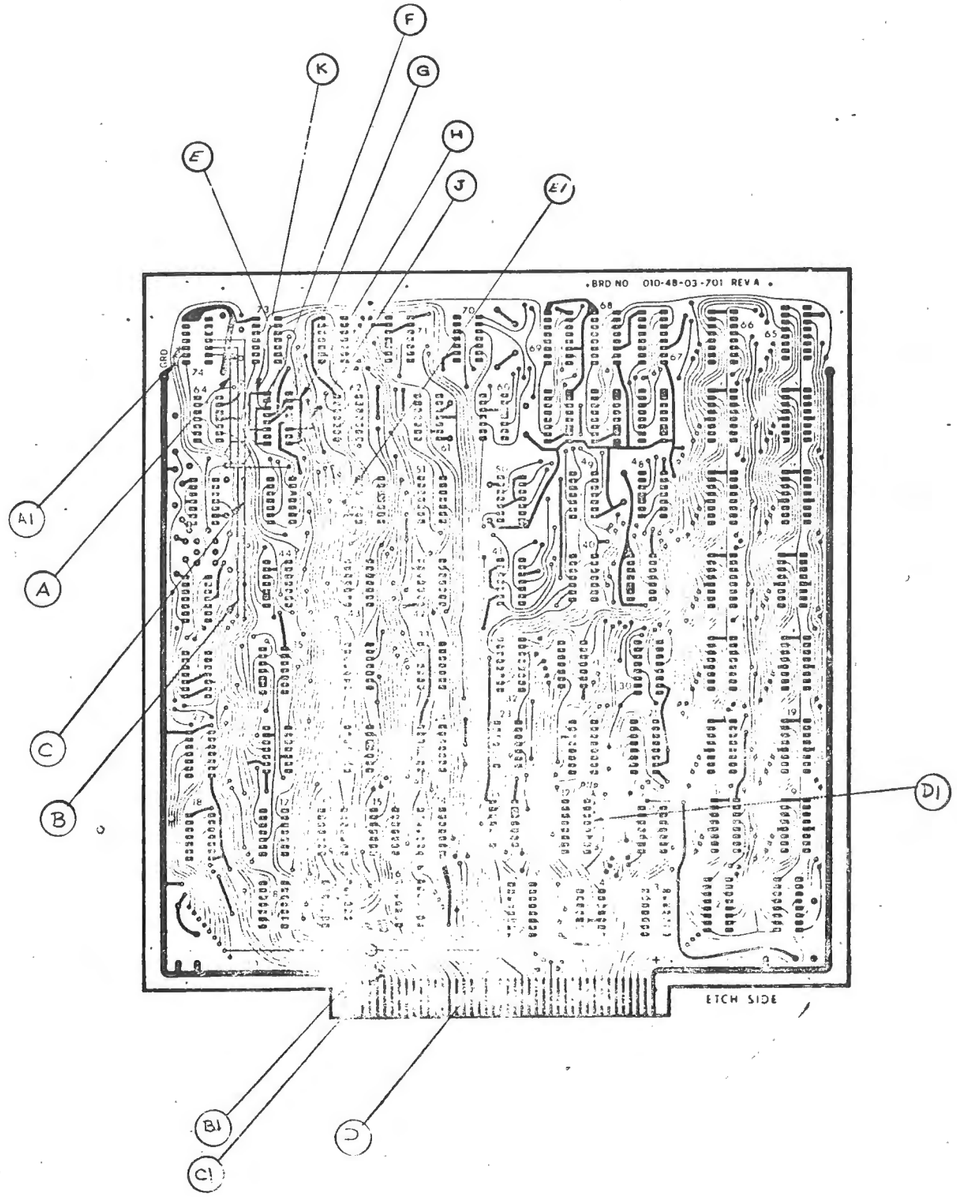
THIS DRAWING IS THE PROPERTY OF INCOTERM CORPORATION AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE DISCLOSED REPRODUCED IN WHOLE OR IN PART OR USED FOR MANUFACTURE OR SALE FOR ANY OTHER THAN INCOTERM CORP. IT IS WITH OUT ITS WRITTEN PERMISSION AND THAT NO RIGHT IS GRANTED TO DISCLOSE OR USE

P/C BOARD ASSY
MAGNETIC TAPE
INTERFACE 701/702

DRAWN	11/6/72	DOCUMENT NUMBER	REV
ENGR	11/7/73	010-48-02	D
MFG		SCALE 1-1	SHT 1 OF 4

CUT ETCH FROM	
A1	M74-3 TO M36-2
B1	1/0 82 TO EYELET
C1	1/0 76 TO M8-4
D1	M12-14 TO EYELET
E1	MS2-3 TO M72-10

ADD WIRE (ITEM 49) FROM	
A	M74-13 TO EYELET
B	M74-12 TO EYELET
C	M74-11 TO EYELET
D	1/0 38 TO EYELET
E	MS2-3 TO MS2-2
F	M63-1 TO M63-6
G	M63-4 TO M63-11
H	M63-10 TO M63-16
J	M63-14 TO EYELET
K	M63-3 TO M63-8



ETCH SIDE

ASSY WITH ARTWORK 010-48-03-701 Rev A.

INCOTERM CORPORATION

701-702

SIZE	DOCUMENT NUMBER	REV
D	010-48-02	D

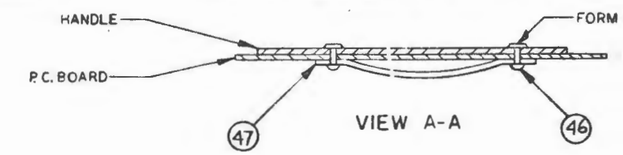
SCALE 1-1 SHEET 2 OF 4

320

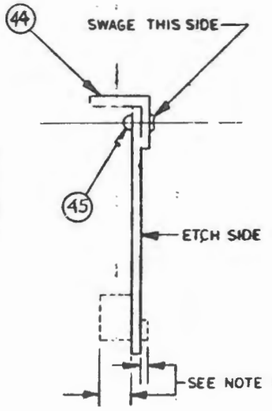
CUT ETCH FROM	
A1	M63-10 TO EYELET
A2	M35-3 TO M39-3

ADD JUMPER FROM	
A	M39-9 TO M93-11

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANG	CHK	APPD



VIEW A-A



SEE NOTE 2

SEE TABLE 1 FOR JUMPER ARRANGEMENT ON 701 OR 702 ASSY

A1

31

SEE NOTE 3

A

A2

(CUT ETCH BEFORE I.C. IS INSTALLED)

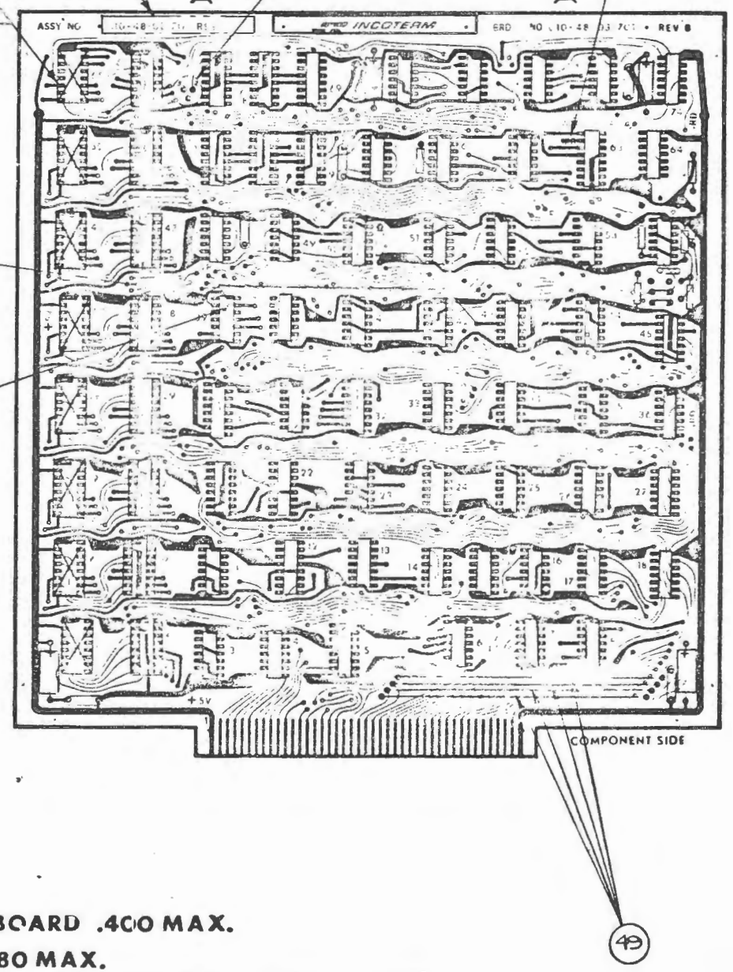
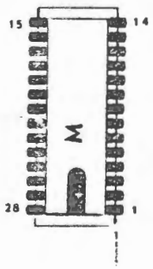
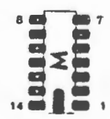
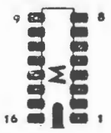


TABLE 1	
ADD JUMPER ITEM 49	FROM
701	EYELET 1 TO EYELET 2
702	EYELET 1 TO EYELET 3







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
38	R9
37	R2,4,5,6
36	R1,7,8
35	
34	
33	
32	
31	
30	
29	C11,13,14,15
28	C5 6 7 8,9,10
27	C1,2,3,4
26	
25	
24	M6,7
23	M 2, 10, 20, 29, 38, 47, 56, 66
22	M57,58,59,67,68,69
21	M21,30
20	M63
19	M12,22
18	M36,43,45,62
17	M5,32
16	M33
15	M8,17,13,27
14	M19,15,16
13	M35,39,53
12	M54,61
11	M4,13,31,34,49,70,72
10	M3,11,41,42,50
9	M23,25,44,52,74
8	M24,26,45,49,51,60,64,71,73
7	
6	
5	
4	
3	
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN, REV LABEL ITEM 48 AND MARK "ASSY NO. 010-48-02-701 OR 702 & LATEST ASSY REV
3. PATTERN MARKED X NOT USED (701 ONLY)

ASSEMBLE WITH ARTWORK NO. 010-48-03-701 REV B

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

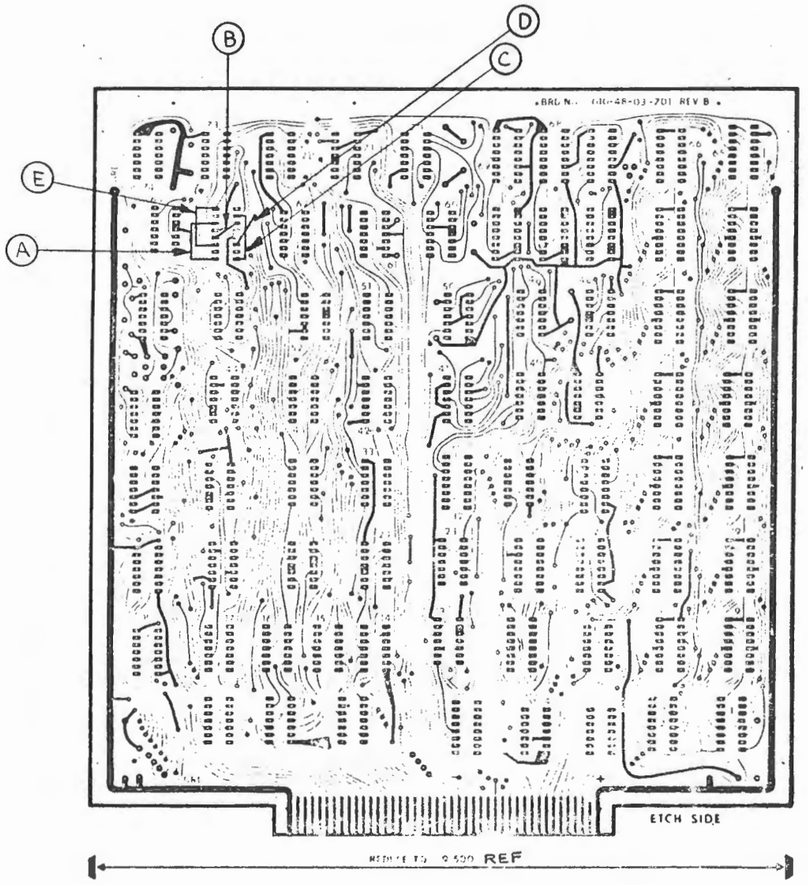
P/C BOARD ASSY
MAGNETIC TAPE
INTERFACE 701-702

DRAWN			
CHECKED		D	010-48-02
APPROVED			
FIRST U/A			

D

321

ADD WIRE ITEM 49 FROM
A | M63-1 TO M63-6
B | M63-4 TO M63-11
C | M63-10 TO M63-16
D | M63-14 TO EVELET
E | M63-3 TO M63-8



REVISION HISTORY

REVISION	DESCRIPTION	CHK

ETCH SIDE

ASSEMBLE WITH ARTWORK 010-48-03-701 REV. B

INCOTERM CORPORATION

P.C. BOARD ASSY.
MAGNETIC TAPE
INTERFACE 701/702

D 010-48-02 D

1-1 4 4

322

REVISION HISTORY					
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
	1	ENG REV	GJA	
	2	REVISED 9 OCT 73	GJA	
A		REVISED/RD # 771	"	"
B		REVISED/ECO 2743	GJA	
C		REVISED/ECO 2730	GJA	
D		REVISED/ECO 2856	GJA	
	DI	REDRAWN/ECO 3060 3-7-75	GJA	A
E		REVISED/ECO 3865 3-25-75	GJA	

VCC
GRD
C1 + C2 + C3 + C4 + C5 C6 C7 C8 C9 C10
5 5 5 5 1 1 1 1 1 1
(1) (2) (85) (86)

FUNCØØ (20) FUNCØ1 (22) FUNCØ2 (24) FUNCØ3 (26)
M32 7442 FUND

TYPØØ (19) TYPØ1 (21) ADDXX (28)
M5 7442 TYPD

RESET (25)
I.OR

CPTØ9N (36)
T9*
T9
ACKF (SH2) M43-11
CIOE*(SH1) M39-9
T9+T13 (SH3) M64-4

FNF M31 7404 → TONL* (SH2) M41-10
FNE M40 7404 → TOVFLW* (SH2) M50-1
FND M40 7404 → TLWD* (SH2) M41-13
FNC M40 7404 → TRWD* (SH2) M42-2
FNB M40 7404 → TFPT* (SH2) M50-10
FNA M40 7404 → THER* (SH2) M50-13
FN9 M40 7404 → TEMK* (SH2) M50-4
FN8 M31 7404 → TRDY* (SH2) M41-4
BUSY* (SH6)
FN7 M31 7404 → TBOT* (SH2) M41-1
FN6 M31 7404
CIO M13 7404
TIO M13 7404 → TACKA (SH2) M42-13

(SH11) CONRST* → PARF* M48 7400 → PAR* (SH6) M8-11
PARF

CIOF* M48 7400
CIOE* M39 7410 ← T9 (SH1)
CIOD* M49 7400 → MASKF (SH2) M53-13
CIOC* M49 7400 → MASKF* (SH2) M53-5
CIOB* M49 7400 → CLRADR (SH3) M60-13
CIOA* M49 7400 → LWDF (SH3) M62-10
CIO9* M39 7410
CIO8* M39 7410
CIO8 M44 7402
CIO7* M48 7400
CIO6 M23 7402 → RESET* (SH11)
TEOT* (SH2) M42-9

WIO8 M23 7402 → WIO8* (SH3) M70-3
WIO8* (SH2) M61-11
RIO8 M23 7402 → M3-1,4,10,12 INBØ-7* (SH4&5) M11-1,4,10,12
DECCC* (SH3) M74-8
RIO8A* (SH2) M6H-3
RIO6* M51 7400 → RIO6INT (SH2) M72-13
RIO6AEF (SH2) M52-9
CINTF (SH2) M43-3
RIO6 (SH2) M73-13
RIO M13 7404
CONRST M44 7402
CLRINTR* (SH2) M52-5

RESET* M23 7402 → FEN* (SH6) M17-13
CIO6 (SH11)

(SH2) OTBO → M36 7474 TADIF → TAD1* (SH6) M8-9
(SH2) COF → SETTD* M26 7400
(SH2) WRTF* → SETTD*
QTBI (SH2) → M36 7474 TADØF → TADØ* (SH6) M17-1
M45 7474 TDF
READY (SH6) → CK
BM[Ø-3] (SH4) M2H
BM[4-7] (SH5) M30-1

RWDF M26 7400 → RWD* (SH6) M17-5
(SH6) REWA* → M35 7410 → BUSY (SH6) M33-1
RWDF*
OFLF M26 7400 → OFL* (SH6) M17-3
M35 7410 → BUSY (SH6) M33-2
RI IK OFLF* VCC

REVF (SH2)
WRTF (SH2)
FMF (SH2)
ERASEF (SH2)
EDITF (SH2)
THR1F (SH2)
THR2F (SH2)
GOF (SH2) M45-12
(SH6) ONLA → MI2-4,13
M22-4,13

CLRADR* (SH3) M64-1
OVFLWF* (SH3) M64-13
CLRSTAT* M44 7402
CLRSTAT M34 7404 → M25-6 HERF (SH6)
FMKF (SH6) M25-8
CONRST* M17 7416

RIO6AEF (SH2) M43-1
EOTF* (SH6) M35-10
CINTF (SH2) M73-12
MASKF (SH2) M53-2
GOF (SH2) M45-13
PARF* (SH11) M48-5

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTORS VALUES ARE IN OHMS AND ARE 1/4W. ±5%.
   B. ALL CAPACITORS VALUES ARE IN MICRO, FARADS
2. THE FOLLOWING I/O PINS ARE PRE-ASSIGNED AND MUST BE USED FOR THE FUNCTION DESRIBED ONLY:
   A. +5V PINS 1, 2. E. I/O BUSS PINS 3-37
   B. GRD PINS 85, 86.
   C. +12V PINS 75, 76.
   D. -13V PINS 81, 82.
3. JUMPER FROM 1 TO 2 FOR 1K MEM. BUFFER OR 1 TO 3 FOR 2K MEM. BUFFER. EYELETS FOR JUMPERS ARE ON BOARDS WITH ARTWORKS REV B OR GREATER. (SEE SH3).
4. FOR 1K BYTE BUFFER RAM MUST BE IN THE FOLLOWING LOCATIONS: M2, 10, 20, 29, 38, 47, 56. FOR 2K BYTE BUFFER, RAM MUST BE IN THE FOLLOWING LOCATIONS: M1, 2, 9, 10, 19, 20, 28, 29, 37, 38, 46, 47, 55, 56. (SEE SH4)
5. JUMPER ON BOARDS ASSY TO ARTWORK REV E OR GREATER (SEE SH6).

HIGHEST REF DES USED			
	C15	R9	M74
REF DES NOT USED			
R3, C12			

ITEM	PART/ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE:
.X ± .1 .XX ± .02 .XXX ± .005
FRACTIONS ± 1/64 ANGLES ± 1°

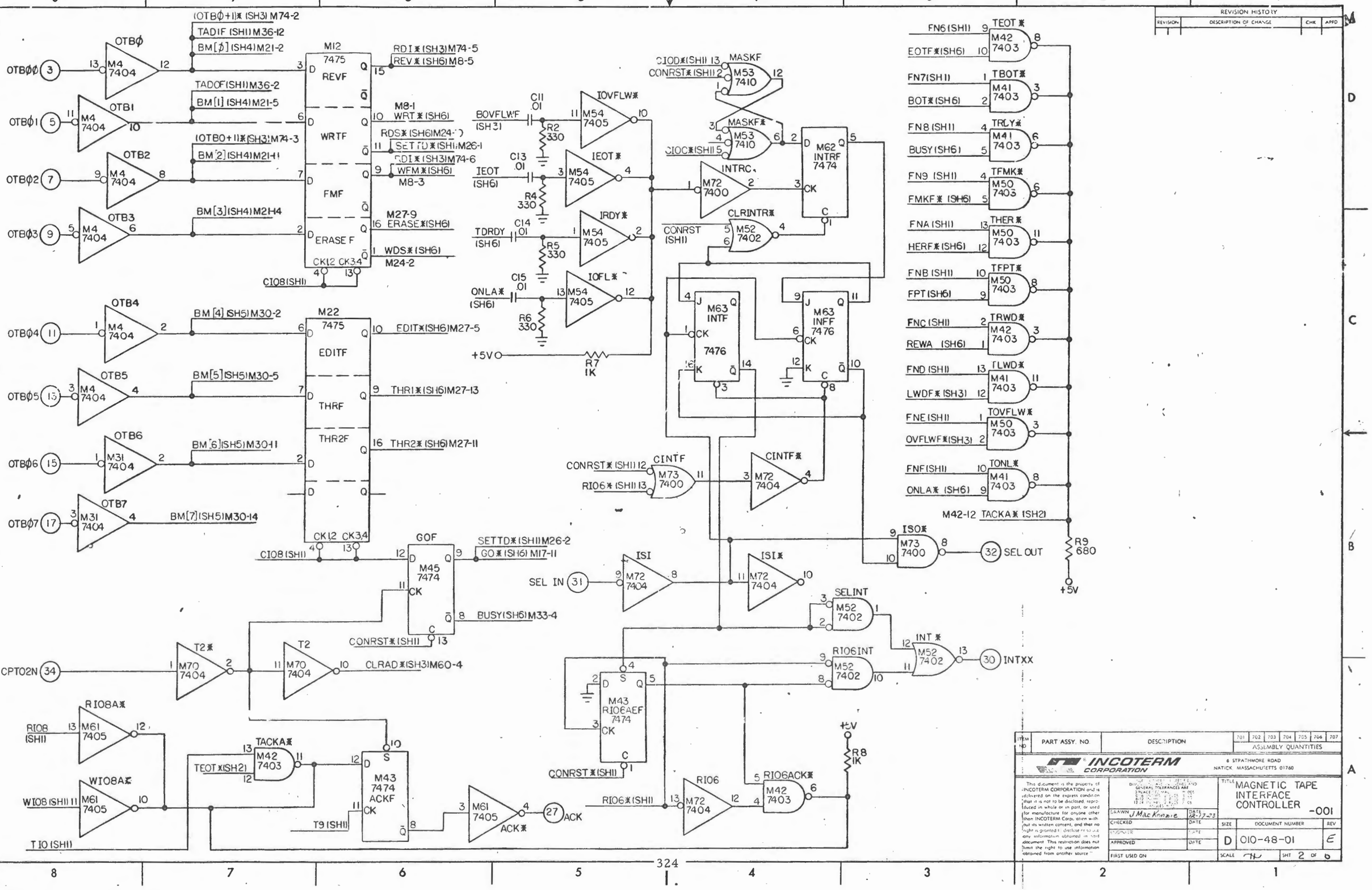
	DATE
DRAWN Jon Ma. Richie	12-2-73
CHECKED	DATE
ENG APPD	DATE 3-5-74
APPD FOR	DATE 3-5-74
FIRST USED ON	

TITLE: MAGNETIC TAPE INTERFACE CONTROLLER -001

SIZE	DOCUMENT NUMBER	REV
D	C10-48-01	E

SCALE | SHT 1 OF 6

323


REVISION HISTORY
REVISION | DESCRIPTION OF CHANGE | CHK | APPD
OTBØ
OTBØØ (3)
OTBØ1 (5)
OTBØ2 (7)
OTBØ3 (9)
OTB1
OTB2
OTB3
M4 7404
(OTBØ+1)* (SH3) M74-2
TADIF (SH1) M36-12
BM[Ø] (SH4) M21-2
TADOF (SH1) M36-2
BM[1] (SH4) M21-5
(OTBØ+1)* (SH3) M74-3
BM[2] (SH4) M21-4
BM[3] (SH4) M2H-4
MI2
7475
REVF
WRTF
FMF
ERASE F
CK12 CK34
CI08 (SH1)
RDI* (SH3) M74-5
REV* (SH6) M8-5
M8-1
WRT* (SH6)
RDS* (SH6) M24-7
SETTD* (SH1) M26-1
RDI* (SH3) M74-6
WFM* (SH6)
M8-3
M27-9
ERASE* (SH6)
WDS* (SH6)
M24-2
OTB4
OTB5
OTB6
OTB7
OTBØ4 (11)
OTBØ5 (13)
OTBØ6 (15)
OTBØ7 (17)
BM[4] (SH5) M30-2
BM[5] (SH5) M30-5
BM[6] (SH5) M30-11
BM[7] (SH5) M30-14
M22
EDITF
THRF
THR2F
EDIT* (SH6) M27-5
THR1* (SH6) M27-13
THR2* (SH6) M27-11
GOF
M45 7474
SETTD* (SH1) M26-2
GO* (SH6) MI7-11
BUSY (SH6) M33-4
CONRST* (SH1)
CPT02N (34)
T2*
T2
M70 7404
CLRAD* (SH3) M60-4
RI08A*
RI08 (SH1)
WI08A*
WI08 (SH1) 11
T10 (SH1)
TACKA*
M42 7403
TEOT* (SH2)
T9 (SH1)
M43 7474 ACKF
M61 7405
ACK*
27 ACK
BOVFLW (SH3)
IEOT (SH6)
TDRDY (SH6)
ONLA* (SH6)
C11 .01
C13 .01
C14 .01
C15 .01
R2 330
R4 330
R5 330
R6 330
R7 1K
M54 7405
IOVFLW*
IEOT*
IRDY*
IOFL*
+5V
CIOD* (SH1) 13
CONRST* (SH1) 2
MASKF
MASKF*
M53 7410
CIOC* (SH1) 5
INTRC
M72 7400
CLRINTR*
M52 7402
M62 INTRF 7474
M63 INTF 7476
M63 INFF 7476
CINTF
CINTF*
M73 7400
M72 7404
RI06* (SH1) 13
RI06
RI06ACK*
M42 7403
RI06INT
M43 RI06AEF 7474
ISI
ISI*
SEL IN (31)
SELINT
INT*
30 INTXX
ISO*
32 SEL OUT
R9 680
R8 1K
FN6 (SH1)
EOTF* (SH6)
FN7 (SH1)
BOT* (SH6)
FN8 (SH1)
BUSY (SH6)
FN9 (SH1)
FMKF* (SH6)
FNA (SH1)
HERF* (SH6)
FNB (SH1)
FPT (SH6)
FNC (SH1)
REWA (SH6)
FND (SH1)
LWDF* (SH3)
FNE (SH1)
OVFLWF* (SH3)
ONLA* (SH6)
M42-12 TACKA* (SH2)
TEOT*
TBOT*
TRDY*
TFMK*
THER*
TFPT*
TRWD*
TLWD*
TOVFLW*
TONL*
M41 7403
M50 7403
PART ASSY. NO.
DESCRIPTION
ITEM NO
701 702 703 704 705 706 707
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corp. ation with out its written consent, and that no right is granted t disclose or to use any information obtained in this document. This restriction does not limit the right to use information obtained from another source
DRAWN J Mac Kenzie
DATE 12-17-73
CHECKED
ENGINEER
APPROVED
FIRST USED ON
TITLE MAGNETIC TAPE INTERFACE CONTROLLER -001
SIZE D
DOCUMENT NUMBER 010-48-01
REV E
SCALE
SHT 2 OF 6
324

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	BY	APPD

RDS(SH6)
CCG(SH6) 11
TDRED* M53 7410
RWA M73 7400
AD3QD*(SH3) 9
RW* M71 7400
BM(SH4&5)M2-3

REVF(SH2) 11
FMF(SH2) 12
RDI* M74 7402
PIN NUMBERING WITH BRDS ASSY USING ARTWORK REV A

WI08(SH1) 3
WI08* M70 7404

REVF(SH2) 5
FMF(SH2) 6
RDI* M74 7402
PIN NUMBERING WITH BRDS ASSY USING ARTWORK REV B OR GREATER.

RWA* M72 7404
INCAD M71 7400
DECCC*(SH3)
AD3QD*(SH3) 12
OVFLW* M71 7400
OVFLWF(SH3)M64-9
INCAD* M71 7400
AD3QD*(SH3)

RIO8(SH1) 8
WDS(SH6) 9
DECCC* M74 7402
INCAD(SH3)M7I-2

CPTI3N (33)
TI3* M70 7404
T9&TI3 M64 7400
T9*(SH1) 4

OTBØ(SH2) 2
OTB2(SH2) 3
(OTBO+1)* M74 7402
CLRADR* M64 7400
CIO8(SH1) 1
CLRADR M60 7400
CIOB*(SH1)
DECAD* M60 7400

SETCC* M60 7400
CPTI8N (35)

CLRAD* M60 7400
T2(SH2) 4

OVFLW*(SH3) 9
OVFLWF M64 7400
CLRSTAT*(SH1) 13
TOVFLW*(SH2) M50-2
BOVFLWF M73 7400
IOVFLW*(SH2)CII

MI8
BMA0(SH4&5)
BMA1(SH4&5) MI-4
BMA2(SH4&5) MI-5
BMA3(SH4&5) MI-6
BMA4(SH4&5)MI-7
BMA5(SH4&5) MI-2
BMA6(SH4&5) MI-1
BMA7(SH4&5) MI-16
MI-15 BMA8(SH4&5)
BMA9(SH4&5) MI-14
BM1(SH4&5)M2-13
M7I-12 OVFLW*(SH3) 9

M59 74193 AD1
M69 74193 CC1
M58 74193 AD2
M68 74193 CC2
M57 74193 AD3
M67 74193 CC3
LD UP DWN A B C D QA QB QC QD C CAR BOR

(SEE NOTE 3) ON SH 1

AD3QD* M70 7404
INCAD*(SH3)M7I-5
R/W*(SH3)M7I-9
AD3QC* M70 7404
BM2(SH4&5) MI-13

CIOA*(SH1)
M62 7474 LWDF
LWD*(SH6) M8-13
TLWD*(SH2) M41-12

ITEM NO.	PART/ASSY. NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

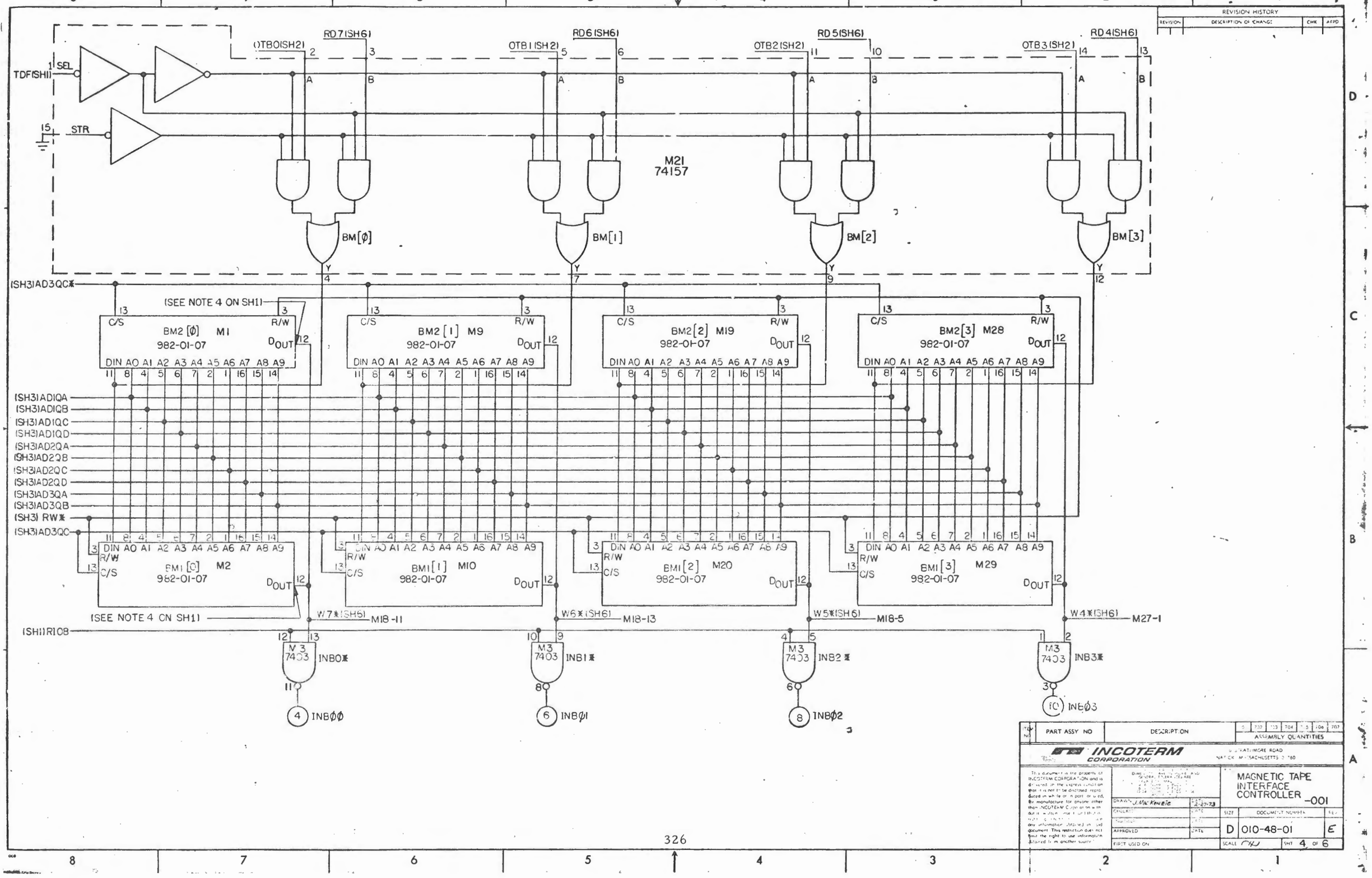
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN J. MacKenzie DATE 12-10-75
CHECKED DATE
ENGINEER DATE
APPROVED DATE
FIRST USED ON

TITLE MACNETIC TAPES INTERFACE CONTROLLER -001

SIZE	DOCUMENT NUMBER	REV
D	010-48-01	E

SCALE NONE SHT 3 OF 6


REVISION HISTORY
REVISION
DESCRIPTION OF CHANGE
CHK
APPD
TDF(SH1)
1 SEL
15
STR
OTB0(SH2)
RD7(SH6)
OTB1(SH2)
RD6(SH6)
OTB2(SH2)
RD5(SH6)
OTB3(SH2)
RD4(SH6)
M21
74157
BM[Ø]
BM[1]
BM[2]
BM[3]
(SH3)AD3QC*
(SEE NOTE 4 ON SH1)
BM2[Ø] M1
BM2[1] M9
BM2[2] M19
BM2[3] M28
982-01-07
C/S
R/W
DOUT
DIN A0 A1 A2 A3 A4 A5 A6 A7 A8 A9
(SH3)AD1QA
(SH3)AD1QB
(SH3)AD1QC
(SH3)AD1QD
(SH3)AD2QA
(SH3)AD2QB
(SH3)AD2QC
(SH3)AD2QD
(SH3)AD3QA
(SH3)AD3QB
(SH3) RW*
(SH3)AD3QC
BMI[Ø] M2
BMI[1] M10
BMI[2] M20
BMI[3] M29
(SEE NOTE 4 ON SH1)
W7*(SH6) M18-11
W6*(SH6) M18-13
W5*(SH6) M18-5
W4*(SH6) M27-1
(SH1)R108
M3 7403
INBØ*
INB1*
INB2*
INBØ3
INBØØ
INBØ1
INBØ2
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
MAGNETIC TAPE INTERFACE CONTROLLER -001
DRAWN J. MacKenzie
DATE 2-27-73
CHECKED
APPROVED
FIRST USED ON
SIZE D
DOCUMENT NUMBER 010-48-01
REV E
SCALE
SHT 4 OF 6
326

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

TDF(SH1) 1 SEL
15 STR

OTB4(SH2) 2 RD3(SH6) 3
OTB5(SH2) 5 RD2(SH6) 6
OTB6(SH2) 11 RD1(SH5) 10
OTB7(SH2) 14 RDØ(SH6) 13

M30
74157

BM[4] BM[5] BM[6] BM[7]

(SH3)AD3QC*

BM2[4] M37 982-01-07
BM2[5] M46 982-01-07
BM2[6] M55 982-01-07
BM2[7] M65 982-01-07
C/S R/W DOUT
DIN A0 A1 A2 A3 A4 A5 A6 A7 A8 A9
11 8 4 5 6 7 2 1 16 15 14

(SH3)ADIQA
(SH3)ADIQB
(SH3)ADIQC
(SH3)ADIQD
(SH3)AD2QA
(SH3)AD2QB
(SH3)AD2QC
(SH3)AD2QD
(SH3)AD3QA
(SH3)AD3QB
(SH3) RW*
(SH3)AD3QC

BMI[4] M38 982-01-07
BMI[5] M47 982-01-07
BMI[6] M56 982-01-07
BMI[7] M66 982-01-07

W3*(SH6) M27-3
W2*(SH6) M18-9
W1*(SH6) M18-1
WØ*(SH6) M18-3

(SH1)R10B

M11 7403 INB4*
M11 7403 INB5*
M11 7403 INB6*
M11 7403 INB7*

12 INBØ4
14 INBØ5
16 INBØ6
18 INBØ7

ITEM NO	PART/ASSY. NO.	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

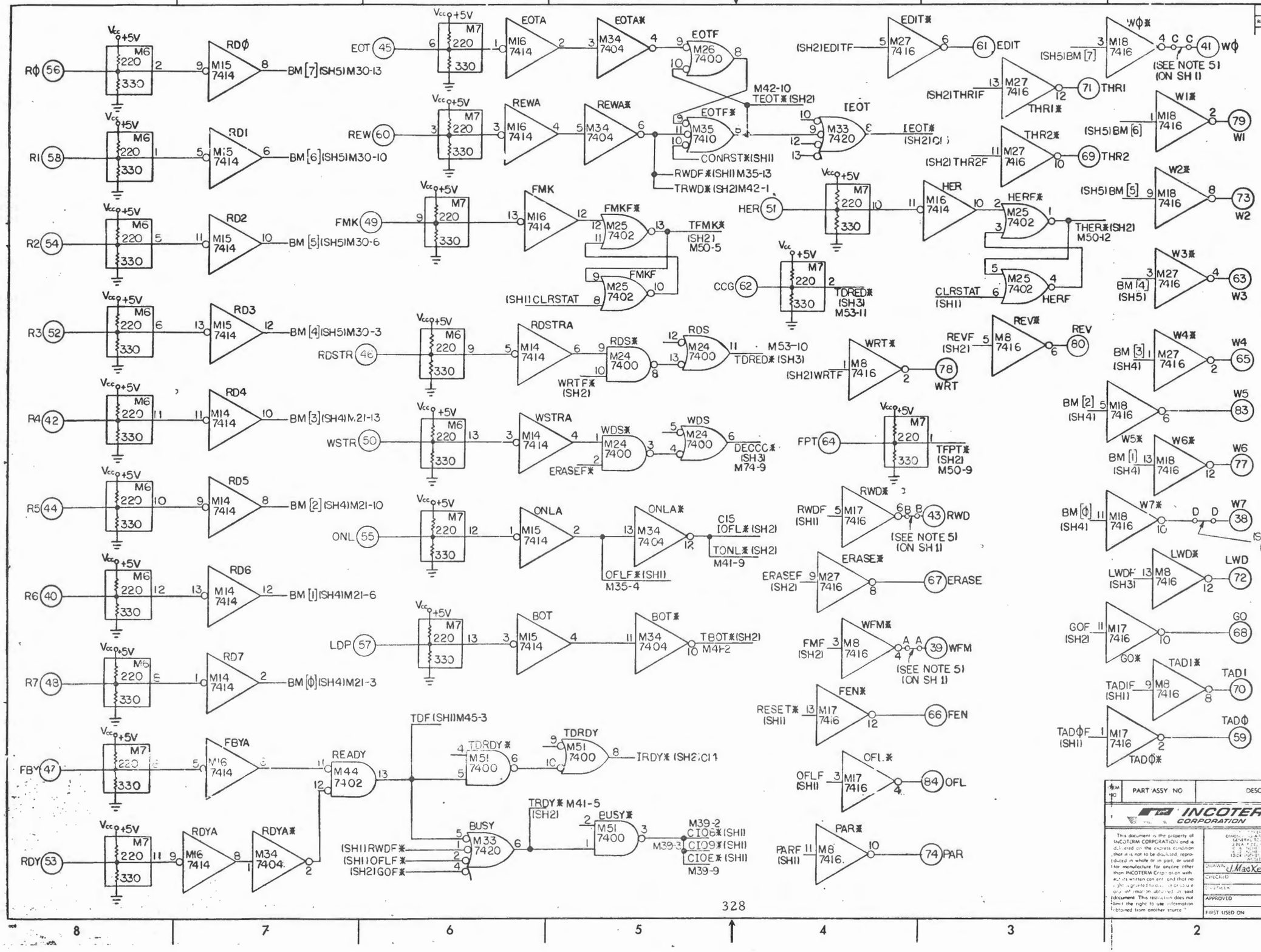
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said ... Th... not limit the right to use information obtained from another source

DIMENSIONS ARE IN INCHES AND MILLIMETERS
DECIMALS ARE GENERAL TOLERANCES ARE
DECIMAL ± .005
X ± .1 2 PLACE ± .13
XXX ± .25 3 PLACE ± .13
FRACTIONAL ± 1/64 ANGLES ± 1°

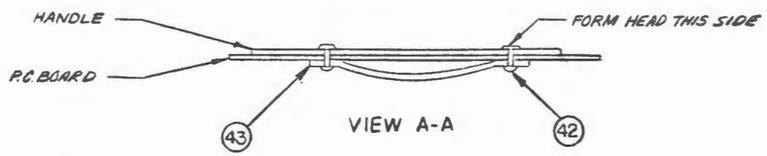
TITLE: MAGNETIC TAPE INTERFACE CONTROLLER -001

DRAWN J. MAC KENZIE	DATE 12-27-73	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	010-48-01	E
ENGINEER	DATE			
APPROVED	DATE			
FIRST USED ON		SCALE NONE	SHT 5 OF 6	

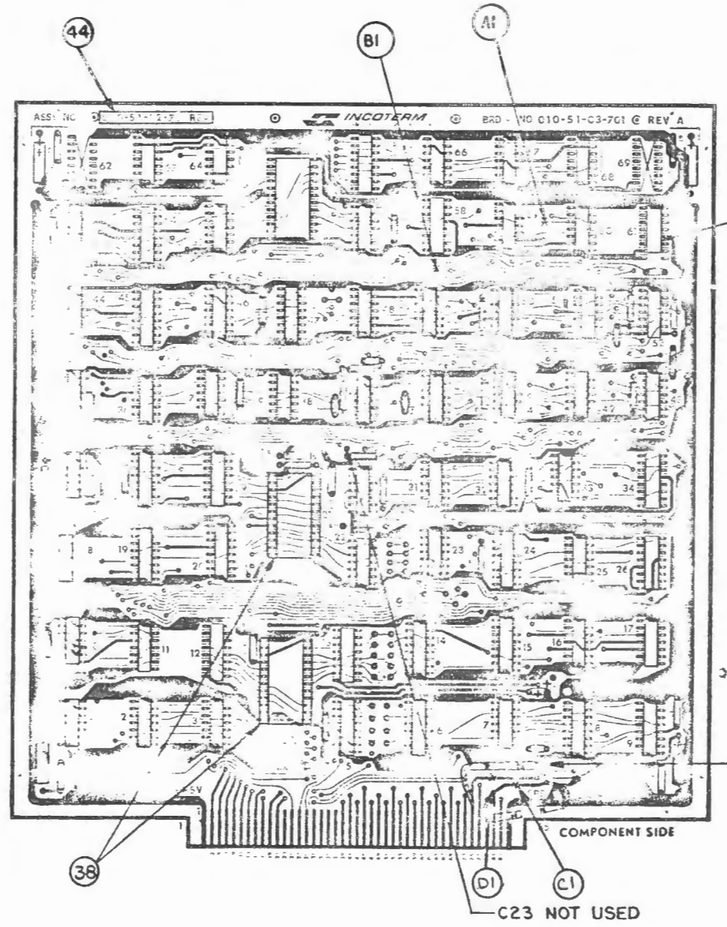

REVISION HISTORY
REVISION | DESCRIPTION OF CHANGE | CHK | APPD
RDØ
RD1
RD2
RD3
RD4
RD5
RD6
RD7
FBYA
RDYA
RDYA*
R0 (56)
R1 (58)
R2 (54)
R3 (52)
R4 (42)
R5 (44)
R6 (40)
R7 (48)
FB (47)
RDY (53)
BM [7] (SH5) M30-13
BM [6] (SH5) M30-10
BM [5] (SH5) M30-6
BM [4] (SH5) M30-3
BM [3] (SH4) M21-13
BM [2] (SH4) M21-10
BM [1] (SH4) M21-6
BM [Ø] (SH4) M21-3
EOT (45)
REW (60)
FMK (49)
RDSTR (46)
WSTR (50)
ONL (55)
LDP (57)
READY
TDF (SH1) M45-3
IRDY* (SH2) C11
BUSY
TRDY* M41-5 (SH2)
(SH1) RWDF*
(SH1) OFLF*
(SH2) GOF*
M39-3
M39-2
C106* (SH1)
C109* (SH1)
C10E* (SH1)
M39-9
EOTA
EOTA*
EOTF
EOTF*
REWA
REWA*
FMK
FMKF*
FMKF
RDSTRA
RDS*
RDS
WRTF* (SH2)
TDRED* (SH3) M53-10
WSTRA
WDS*
WDS
ERASEF*
DECCC* (SH3) M74-9
ONLA
ONLA*
C15 IOFL* (SH2)
TONL* (SH2) M41-9
OFLF* (SH1) M35-4
BOT
BOT*
TBOT* (SH2) M42-2
M42-10 TEOT* (SH2)
CONRST* (SH1)
RWDF* (SH1) M35-13
TRWD* (SH2) M42-1
TEOT
TEOT* (SH2) C13
TFMK* (SH2) M50-5
CCG (62)
TDRED* (SH3) M53-11
FPT (64)
TFPT* (SH2) M50-9
HER (51)
HERF*
THER* (SH2) M50-12
CLRSTAT (SH1)
HERF
EDIT*
(SH2) EDITF
EDIT (61)
WØ*
(SEE NOTE 5 ON SH 1)
WØ (41)
(SH5) BM [7]
(SH2) THRIF
THRI (71)
THRI*
W1*
W1 (79)
(SH5) BM [6]
(SH2) THR2F
THR2*
THR2 (69)
W2*
W2 (73)
(SH5) BM [5]
W3*
W3 (63)
BM [4] (SH5)
REV*
REVF (SH2)
REV (80)
W4*
W4 (65)
BM [3] (SH4)
WRT*
(SH2) WRTF
WRT (78)
W5
W5 (83)
BM [2] (SH4)
W5*
W6*
W6 (77)
BM [1] (SH4)
W7*
W7 (38)
BM [Ø] (SH4)
(SEE NOTE 5 ON SH 1)
RWD*
RWDF (SH1)
RWD (43)
(SEE NOTE 5 ON SH 1)
LWD*
LWD (72)
LWDF (SH3)
ERASE*
ERASEF (SH2)
ERASE (67)
GO (68)
GOF (SH2)
GO*
WFM*
FMF (SH2)
WFM (39)
(SEE NOTE 5 ON SH 1)
TAD1*
TAD1 (70)
TADIF (SH1)
FEN*
RESET* (SH1)
FEN (66)
TADØ (59)
TADØF (SH1)
TADØ*
OFL*
OFLF (SH1)
OFL (84)
PAR*
PARF (SH1)
PAR (74)
PART ASSY NO | DESCRIPTION | ASSEMBLY QUANTITIES
INCOTERM CORPORATION
6 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation with express written consent and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source.
DRAWN J. MacKenzie 1-21-74
CHECKED
ENGINEER
APPROVED
FIRST USED ON
TITLE MAGNETIC TAPE INTERFACE CONTROLLER -001
SIZE D
DOCUMENT NUMBER 010-48-01
REV E
SCALE
SHT 6 OF 6
328

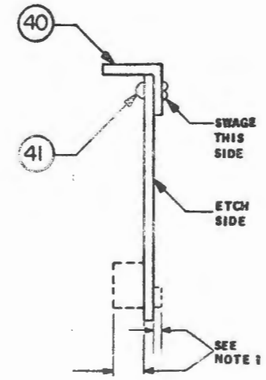
CUT ETCH FROM	
A1	M60-10 TO M59-10
B1	EYELET TO EYELET
C1	I/O PIN B1 TO EYELET
D1	I/O PIN 75 TO EYELET

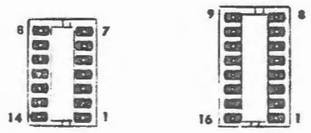
REVISION HISTORY				
REV LTR		DESCRIPTION OF CHANGE	CHK	APPD
	A1	RELEASED/RD# 826A	[illegible]	[illegible]
	A2	REV. CHANGE ONLY/ECO 3076	[illegible]	[illegible]
	A3	REVISED/ECO 3061 4/19/74	[illegible]	[illegible]
B		REVISED/ECO 3223 5/15/74	[illegible]	[illegible]

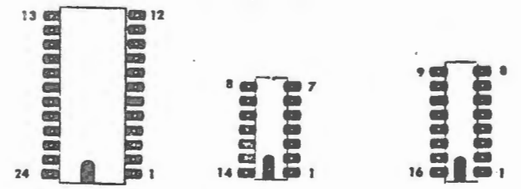


VIEW A-A









PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
51	CR1-4
47	MC1
46	M2
45	M13
44	
43	
42	
41	
40	
39	
38	
37	C17-20
36	C21,22
35	C23-26, C2,3
34	C1,4-16
33	R2,3,13,14,15,16
32	R12
31	R11
30	R4,6,9,10,17
29	R7,8,18
28	R1
27	R5
26	M14
25	M21
24	M2,7
23	M19,20,28,29
22	M56
21	M8,9,15
20	M6,14
19	M5
18	M24,26,34,45,54,58,65
17	M16,17,30
16	M22
15	M47
14	M37
13	M43,31
12	M32,40
11	M48
10	M3,M38
9	M39,50
8	M11,25,36,43,46,52,55,57
7	M1,10,18,27,35,44,53
6	M33,40,42,63,64,66,67,68
5	M41,49,51,59
4	
3	
2	
1	

NOTES:

1. **HEIGHT LIMITATIONS:**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. **LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 44 AND MARK ASSY NO. 010-51-02-701 AND LATEST ASSY REVISION.**
3. PATTERNS MARKED "X" NOT USED. M62, M69.
4. 14 PIN I.C. USED IN 16 PIN PATTERN. PINS 1 & 2 OF PATTERN NOT USED.
5. ATTACH JUMPER WIRE ITEM 48 TO BOARD WITH GLUE ITEM 49 APPROX AS SHOWN (○)
6. ATTACH CLEAR SLEEVING (ITEM 52) OVER DIODE LEADS CR1-CR4 (ITEM 51) BEFORE ATTACHING TO P.C. BRD.

ITEM NO	PART NO	DESCRIPTION	QTY
49	MCGLUE	HOTMELT GLUE (THERMOGRP)	.01 OZ.
48	945-02-02-001	WIRE #24 CA SOLIDWHITE	4FT
2	010-51-03-701	ARTWORK ASSY (REV A)	1

ASSEMBLE WITH ARTWORK 010-51-03-701 REV A

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION — 5 STRATHMORE ROAD, NATICK, MASSACHUSETTS

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

DRAWN	Wm Mac Keveie	2-18-74
CHECKED	[illegible]	2/18/74
ENG APPR	[illegible]	2/19/74
MFG APPR	[illegible]	3/1/74

P.C. BOARD ASSY DECISION DATA CARD-RDR-PUNCH-701

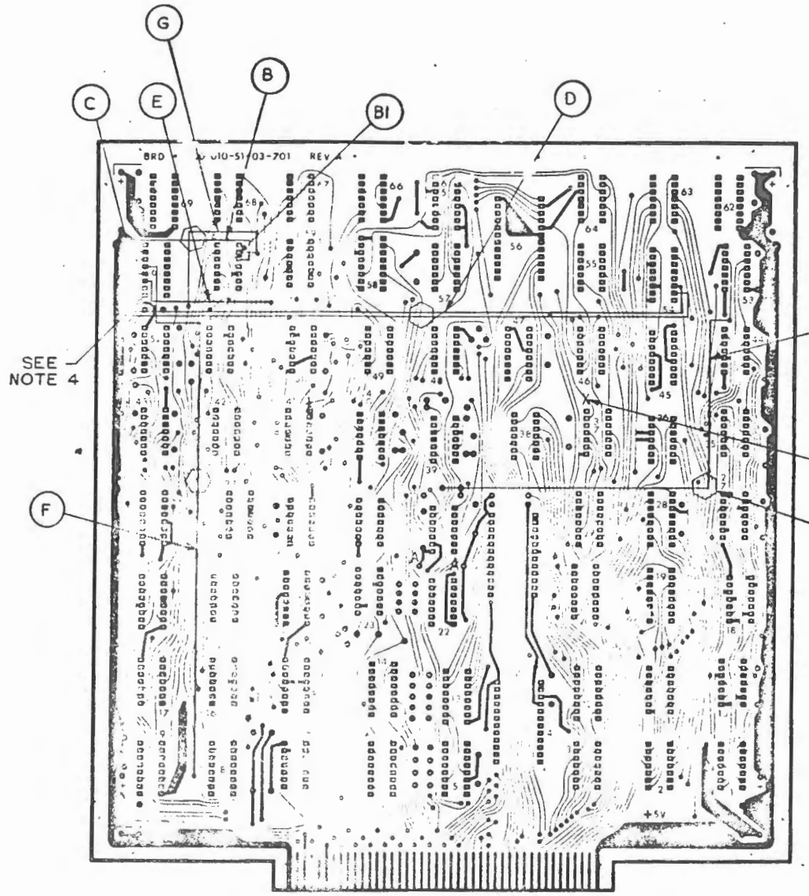
DOCUMENT NO. D C10-51-02 REV B

FINISH [illegible] SCALE NONE SHEET 1 OF 3

329

CUT ETCH FROM	
A1	M37-6 TO EYELET
B1	M60-9 TO M60-10

ADD WIRE(ITEM 48) FROM	
A	EYELET TO EYELET
B	M61-6 TO M60-10
C	M61-5 TO M54-15
D	M61-3 TO M54-14
E	M61-2 TO EYELET
F	M61-4 TO EYELET
G	M60-9 TO EYELET



ETCH SIDE

REVISION	DESCRIPTION OF CHANGE	CHK	APP

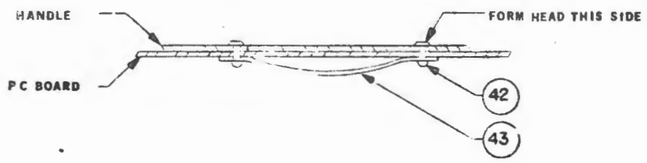
ASSEMBLE WITH ARTWORK 010-51-03-701 REV A

PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

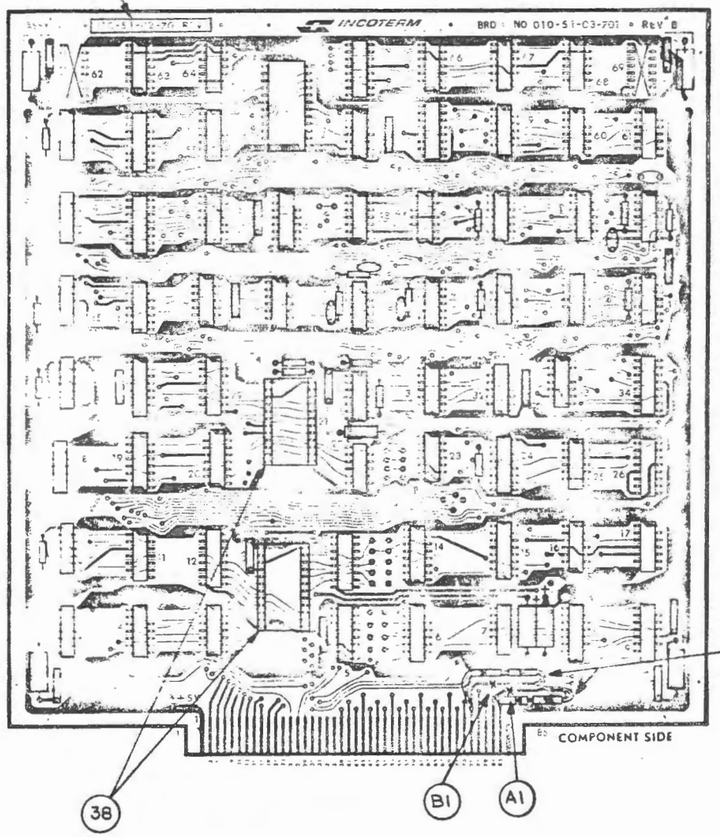
INCOTERM CORPORATION — 8 STRATHMORE ROAD

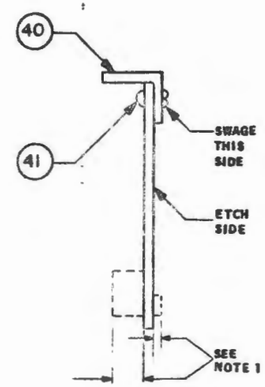
DRAWN	DATE	P.C. BOARD ASSY CARD-RDR-PUNCH (DECISION DATA) -701	
CHECKED	1-10-74	SIZE D	DOCUMENT NUMBER 010-51-02 REV B
ENGR	DATE		
APPROVED	DATE		SHEET 1 OF 3

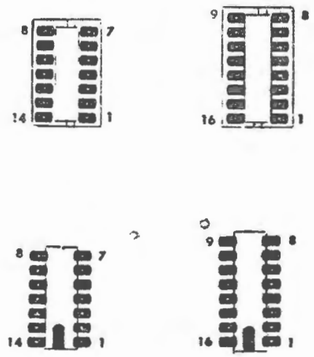
	CUT ETCH FROM
A1	I/O PIN 51 TO EYELET
B1	I/O PIN 75 TO EYELET



SEE NOTE 2 (44)







PIN NUMUMBERING

AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
51	CR1-4
47	M61
46	M13
45	M12
44	
43	
42	
41	
40	
39	
38	
37	C17-C20
36	C21,22
35	C2,C3,C24-C26
34	C1,C4-C16
33	R2,3,13,14,15,16
32	R12
31	R11
30	R4,6,9,10,17
29	R7,8,18
28	R1
27	R5
26	M4
25	M21
24	M2,7
23	M19,20,28,29
22	M56
21	M8,9,15
20	M6,14
19	M5
18	M24,26,34,45,54,58,65
17	M16,17,30
16	M22
15	M47
14	M37
13	M23,31
12	M32,60
11	M48
10	M3,38
9	M39,50
8	M11,25,36,43,46,52,55,57
7	M1,10,15,27,35,44,53
6	M33,40,42,63,64,66,67,68
5	M41,49,51,59
4	
3	
2	
1	

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 44
   AND MARK ASSY NO. 010-51-02-701 AND LATEST ASSY REVISION.
3. PATTERNS MARKED 'X' NOT USED M62, M69
4. INSTALL CLEAR SLEEVING (ITEM 52) OVER DIODE LEADS CR1-CR4 (ITEM 51) BEFORE ATTACHING TO P.C. BRD.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-51-03-701 REV B

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION

DRAWN		MARCH 74	P.C. BOARD ASSY CARD-RDR-PUNCH (DECISION DATA) -701
CHECKED	C.E. Beard	3/15/74	
APPROVED		DATE	D 010-51-02 B
RELEASED ON			1-1 3 OF 3

331

REVISION	DESCRIPTION OF CHANGE	CHK	APPD
B	REV/RED/ECO 3223		

READY (77) — CI — 74175 M9 RDYF — 3 SWAF (SH3) M37-5

READY FOR FEED COMMAND (69) — RFFCF — ENTBOOT* (SH3) M49-2 — RFFCR (SH7) M60-9

INPUT BUFFER FULL (78) — IBFF — TI06* (SH7) M53-1

READ CHECK (72) — RCF — RERF (SH5) M30-10

T9* (SH8) — SCK — M40 7402

OUTPUT BUFFER AVAILABLE (45) — OBAF — OD12 EN (SH4) M32-4 — LOBF* (SH4) — M17 OBAF1 7474 — OBAI* (SH6) C24 — TI05* (SH7) M53-13

INPUT DATA AVAILABLE (70) — IDAF — SIDAFI* (SH1) — BOOTACK (SH3) M42-5 — M16 IDAF1 7474 — IDAFIC — M25 7404 — 4 IDAI* (SH6) C25 — 6 TI01* (SH7) M44-1

SECONDARY HOPPER EMPTY (74) — SHEF — NDRF (SH3) M34-3

PUNCH DATA CHECK (73) — PDCF — HEOR (SH7) M61-4 — SHEP* (SH3) C3 — SINDA2B (SH2) M29-6 — SWAF (SH3) M37-2

M8 74175

PRINT BUFFER AVAILABLE (43) — M2 — OD12 EN (SH4) M32-5 — LOBF* (SH4) — M16 7474 PBAF — PBAI* (SH6) C26 — TI08* (SH7) M44-5

T2* (SH6) — T2 7404 M25 — BOAKF (SH3) M34-6

CARD IN WAIT STATION (44) — M2 — CIWS — M36 7404 — TI07* (SH7) M44-10

INPUT CHECK OR ID12 (68) — ICF — SWAF (SH3) M37-3 — SINDA1B (SH2) M29-3

OUTPUT CHECK OR ID11 (71) — OCF — SWAF (SH3) M37-4 — SINDA4B (SH2) M29-13

PRIMARY HOPPER EMPTY OR ID0 (66) — PHEF — HEOR (SH7) M61-2 — PHEP* (SH3) C2

STACKER FULL OR ID1 (67) — SFF — SF/HE* (SH3) M60-2

74175 M15

RDI (SH2) M23-9 — VI (SH5) M36-9 — SINDD1A (SH7) M19-2 — RD6* (SH2) M38-11 — CKBOOTF (SH3) M40-2 — SINDD4B (SH7) M19-13 — PD7* (SH2) M36-13 — SINDD2B (SH7) M19-6 — RD8* (SH2) M38-1 — SINDD3B (SH7) M19-10

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTOR VALUES ARE IN OHMS AND ARE 1/4W, ±5%
   B. ALL CAPACITOR VALUES ARE IN MICRO-FARADS
2. THE FOLLOWING I/O PINS ARE PRE-ASSIGNED AND MUST BE USED FOR THE FUNCTIONS DESCRIBED:
   A. +5V PINS 1,2
   B. GND .. 85,86
   C. +12V .. 75,76
   D. -13V .. 81,82
   E. I/O BUSS PINS 3 THRU 37

HIGHEST REF DES USED	
M68	R18 C26
REF DES NOT USED	
M62	C23

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

INCOTERM CORPORATION — 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

TITLE: LOGIC DIAGRAM DECISION DATA CARD RDR PUNCH CONT 001

SIZE	DOCUMENT NUMBER	REV
D	010-51-01	B

SCALE — SHT 1 OF 9

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+14VO

VSS 12 MC 15

INPUT CHECK / ID12 (SH1) — RD8* M38 7407 — R1 4.7K — A8 17

OUTPUT CHECK / ID11 (SH1) — RD7* M38 7407 — A7 18

PRIMARY HOPPER EMPTY / ID0 (SH1) — RD6* M38 7407 — A6 19

RD5* M38 7407 — A5 20

RD4* M22 7416 — A4 21

RD3* M22 7416 — A3 1

RD2* M22 7416 — A2 2

RD1* M22 7416 — A1 3

A9 13 — GND 24 — ENB 14 — VGG 16

ROM M21 — MM5230BO

MI2 4.7K

MI3 6.8K

R5 6.8K

Q8 11 — Q7 10 — Q6 9 — Q5 8 — Q4 7 — Q3 6 — Q2 5 — Q1 4

-14V

M2 220 330 — +5VO 14

ID9 (40) — SINDD1B(SH7) MI9-3

ID8 (39) — SINDC3A(SH7) M28-11

ID7 (60) — SINDC2A(SH7)M28-5 / V7(SH5)MII-11

ID4 (58) — SINDD3A(SH7)MI9-11 / V4(SH5)MII-3

ID6 (62) — SINDC4A(SH7)M23-14 / V6(SH5)MII-13

ID3 (61) — SINDD2A(SH7)MI9-5 / V3(SH5)MII-5

ID2 (63) — V2(SH5)MII-1 / SINDD4A SH7 MI9-14

ID5 (59) — V5(SH5)MII-9 / SINDC1A(SH7)M28-2

STACKER FULL/ID11(SH1)

RD4 M36 7404 — RD3 M31 7420 — RD2 M23 7420 — RD1 M23 7420

DM8123 SINDA M29

BEN1* (SH3) — PDCF(SH1) — QCF(SH1) — ICF(SH1) — RI02(SH3) — RERF* (SH5) — SF/HE* (SH3) — OVRNF*(SH6) 13

OUT CONT — 3A — 3B — 2A — 2B — 4A — 4B — 1A — 1B — SEL

3Y 9 — 2Y 7 — 4Y 12 — 1Y 14

DM8123 SINDB M20

BEN1* (SH3) — RERF* (SH5) — SF/HE* (SH3) — RI02(SH3)

OUT CONT — 3A — 3B — 2A — 2B — 4A — 4B — 1A — 1B — SEL

3Y 9 — 2Y 7 — 4Y 12 — 1Y 4

SINDC3Y(SH7)M28-9 — 18 INB07

SINDC2Y(SH7)M28-7 — 16 INB06

SINDC4Y(SH7)M28-12 — 14 INB05

SINDC1Y(SH7)M28-4 — 12 INB04

S'INDD3Y(SH7)MI9-9 — 10 INB03

SINDD2Y(SH7)MI9-7 — 8 INB02

SINDD4Y(SH7)MI9-12 — 6 INB01

SINDD1Y(SH7)MI9-4 — 4 INB00

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document ... the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in it which it may have the right to use information obtained from another source

GENERAL TOLERANCES ARE: FRACTIONAL ± .005; 2 PLACE DECIMAL ± .020; 3 PLACE DECIMAL ± .010; 4 PLACE DECIMAL ± .005; ANGLES ± 1°

TITLE: LOGIC DIAGRAM DECISION DATA CARD RDR PUNCH CONT 001

DRAWN LINSTEDT DATE

CHECKED DATE

ENGINEER DATE

APPROVED DATE

FIRST USED ON

SIZE	DOCUMENT NUMBER	REV.
D	010-51-01	B

SCALE — SHT 2 OF 9

333

8 7 6 5 4 3 2 1

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD
1			

PHEF* (SH11) C2 47CPF R2 330 — PHEP* — M52 7404

SHEF* (SH11) C3 47OPF R3 330 — SHEP* — M52 7404

HEF — M48 7410

CLSTATA — M50 7405

CLRSTATC (SH3) — +5V R4 1K — M49 7400 — HEF*

CLSTATB — M50 7405

RESET (SH8)

SFF (SH11) — SF/HE* — M60 7408 — SINDB2B (SH2)M20-6

RERF* (SH5) 11
CVRNF* (SH6) 12
RDYF* (SH11) 5
PDCF (SH11) 2
OCF (SH11) 4
ICF (SH11) 3
SWAF — M37 7430 — TIO2* (SH7)M53-10

BOOT (84) — +5V R10 1K C4 .1 — EB — M43 7404

RFFCF* (SH11) 2 — ENTBOOT* — M49 7400

FEED* (SH8)M63-12

IDAF1 (SH11) — BOOTACK — M42 7402

T2 (SH11) — BOAKF — M34 7476

BOOTACK* — M43 7404

SIDAF1* — M42 7402 — IDAF1 (SH11)M16-4

RESETB* (SH8)

BOOT* — M39 7405 — TPU BOOT (29)

M30 7474 BOOTF

CKBOOTF — M40 7402

PRIMARY HOPPER EMPTY OR ID0 (SH11)

NDR* — M43 7404

NEW DATA REQUEST (79)

+14V — R11 470 1/2W — R12 120

RERF (SH5)M30-11

NDRFCK — M31 7420

NDRF

IDAF* (SH11)

RDACK* — M66 7402 — R/W ACK (SH6)M48-2 — RIO+WIO (SH6)M49-13

RIO34INT — M68 7402

RIOINT* — M68 7402 — FINT (SH6)M51-13

RIC34ACK — M68 7402 — BEN2* (SH7)M67-2

INTRF (SH6)

INTRF* (SH6)

RIC1ACK* — M59 7400 — DISVC (SH5)M24-7

RDACK — M59 7400

DISVC (SH5)M24-8

RIO1INT — M60 7408

RIC2* — M67 7402 — R/W ACK (SH6)M48-1

BEN1* — M67 7402 — SINDA (SH2)M29-15 — SINDB (SH2)M20-15

CLRSTATC — M60 7408 — CLSTATA (SH3)M50-3

T2A (SH6)

FN3* (SH8) — RIO3 — M66 7402 — RIO3+4* — M67 7402

FN4* (SH8) — RIO4 — M66 7402 — RIO4ACK — M59 7400

FN1* (SH8) — RIO1 — M66 7402

RIO* (SH8)

FN2* (SH8) — RIO2 — M66 7402 — SINDA (SH2)M29-1 — SINDB (SH2)M20-1

BEN2* (SH7)M67-3

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to use or otherwise disclose information contained in said document. This restriction does not limit the right to use information obtained from another source."

DIMENSIONS ARE IN INCHES AND UNLESS OTHERWISE SPECIFIED TOLERANCES ARE
FRACTIONAL ± 1/64
2 PLACE DECIMAL ± .005
3 PLACE DECIMAL ± .010
ANGULAR ± 1°

DRAWN		DATE
CHECKED		DATE
ENGINEER		DATE
APPROVED		DATE
FIRST USED ON		

TITLE: LOGIC DIAGRAM DECISION DATA CARD RDR PUNCH CONT 001

SIZE	DOCUMENT NUMBER	REV
D	010-51-01	B

SCALE — SHT 3 OF 9

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+14VO

DOTB0X M3 7407 — OTB00 (3)
DOTB1X M3 7407 — OTB01 (5)
DOTB2X M3 7407 — OTB02 (7)
DOTB3X M3 7407 — OTB03 (9)
DOTB4X M3 7407 — OTB04 (11)
DOTB5X M3 7407 — OTB05 (13)
DOTB6X M38 7407 — OTB06 (15)
DOTB7X M38 7407 — OTB07 (17)

M12 4.7K
M13 6.8K

ROM M4 MM5230SQ
A1 A2 A3 A4 A5 A6 A7 A8 A9 GND ENB VGG
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8

Q3 M32 7408

M5 74155 DATEXP
1Y3 1Y2 1Y1 1Y0 2Y3 2Y2 2Y1 2Y0 1G 1C1 2C2 2G

ODR1 74174 M6
ODR2 M14 74174

OD1 (57)
OD2 (49)
OD3 (56)
OD4 (52)
OD5 (51)
OD6 (50)
OD7 (47)
OD8 (54)
OD9 (53)
OD0 (55)
OD11 (48)

M24 7476 LOBF
OBAF(SH1)M17-10
PBAF(SH1)M16-10
LOAD (83) OUTPUT BUFFER

+5V R6 1K
RESET(SH8)
RLOBA M50 7405
RLOBB M50 7405

PRINT BUFFER AVAILABLE (SH1)
OBAF (SH1)
ODI2EN M32 7408
OBAFC M25 7404

ODI2 M33 7402
IIF/ODI2* M33 7402
IIFF*(SH8)
IIF M33 7402
INHIBIT (80) INPUTFEED/ ODI2

INTRF*(SH6)
WIOACK M42 7402
WIOACK* M43 7404
R/WACK(SH6)M48-13
WIC*(SH8)
WIO M52 7404
WICINT* M51 7400
FINT (SH6)M51-12

-14V

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is to be used only for the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

TITLE: LOGIC DIAGRAM
DECISION DATA CARD
RDR FUNCH CONT 001

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	010-51-01	B
ENGINEER	DATE			
APPROVED	DATE	SCALE	SHT 4 OF 9	
FIRST USED ON				

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

CR1 CR2 IN4148 C21 25V C15 .1 -14V

81 82

1 2 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 +C17 +C18 +C19 +C20 +5V

85 86 C22 25V C16 .1

75 76 CR3 CR4 IN4148 +14V

SINDB3B (SH2) M20-10 SWAF (SH3) M37-11

RERF (SH1)

M30 7474 RERF

NDRF (SH3)

R/VC

M48 7410

+5VO R8 680 R7 680 R9 1K

RIO/ACK* (SH3)

M24 7476 DISVC

DISVCC

M32 7408

RRERF*

M42 7402

RESET (SH8)

CIOI (SH8)

RIO3+4* (SH3)

VC12* VC13* VC14* VC15* VC16* VC17*

M27 7403 M27 7403 M18 7403 M18 7403 M18 7403 M18 7403

VC23* VC24* VC25* VC26* VC27*

M44 7403 M10 7403 M10 7403 M10 7403 M10 7403

VC34* VC35* VC36* VC37*

MI 7403 MI 7403 MI 7403 MI 7403

VC45* VC46* VC47*

M27 7403 M27 7403 M35 7403

VC56* VC57* VC67*

M35 7403 M35 7403 M35 7403

V1 M36 7404 V2 V3 V4 V5 V6 V7 M11 7404

+5VO 220 330 M2

STACKER FULL OR IDI (SH11)

ID2 (SH2) ID3 (SH2) ID4 (SH2) ID5 (SH2) ID6 (SH2) ID7 (SH2)

INCOTERM CORPORATION

6 STRATHMORE ROAD
NATICK, MASSACHUSETT. 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no rights in any invention disclosed in it may be exercised or any information obtained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND TOLERANCES ARE GENERAL TOLERANCES

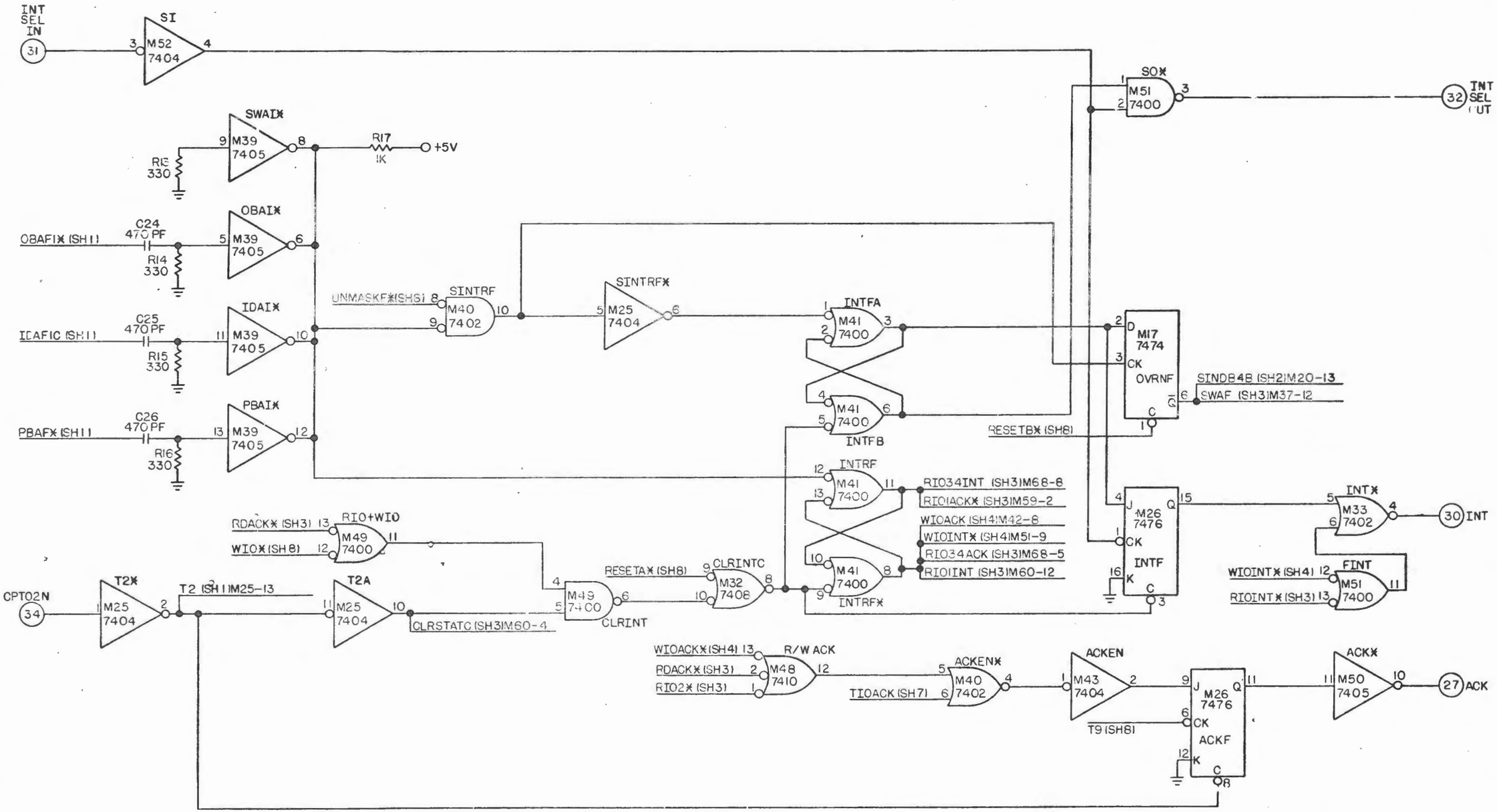
DRAWN	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

TITLE: LOGIC DIAGRAM
DECISION DATA CARD
RDR PUNCH CONT

CODE | DOCUMENT NUMBER | REV
D | 010-51-01 | B

SCALE | SHT 5 OF 9

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD



INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

GENERAL TOLERANCES ARE:
2 PLACE DEC. ± .005
3 PLACE DEC. ± .002
FRACTIONS ± 1/64
ANGLES ± 30'

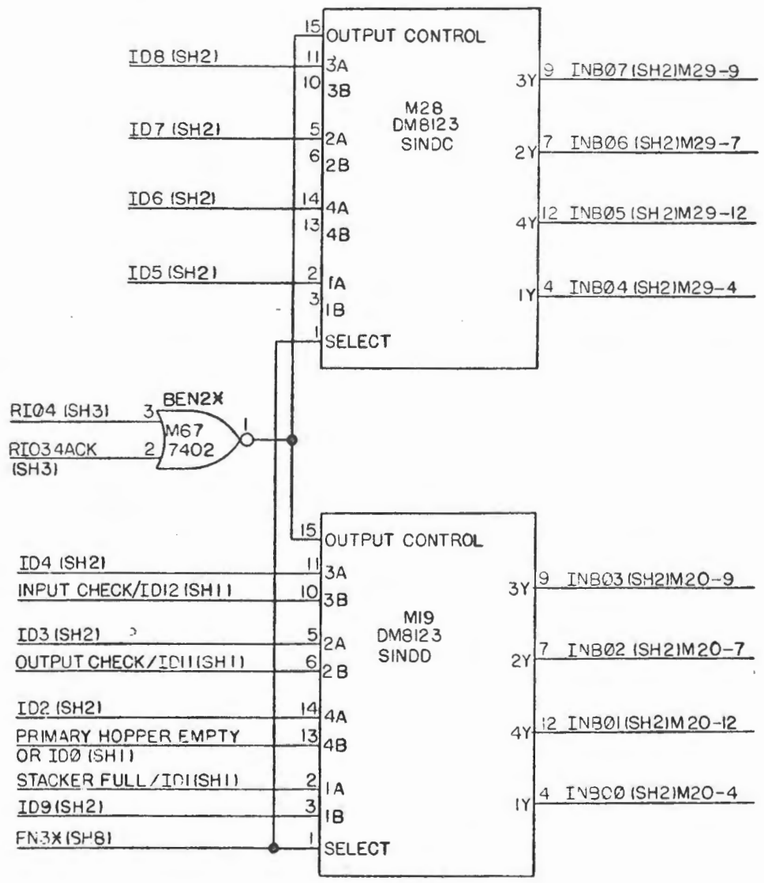
DRAWN	LINSTEDT	DATE
CHECKED		DATE
ENGINEER		DATE
APPROVED		DATE
FIRST USED ON		

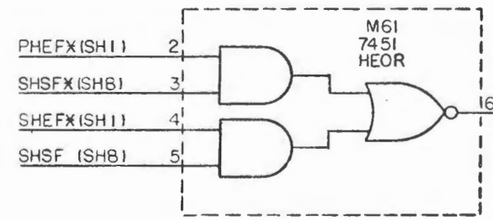
TITLE: LOGIC DIAGRAM
DECISION DATA CARD
RDR PUNCH CONT 001

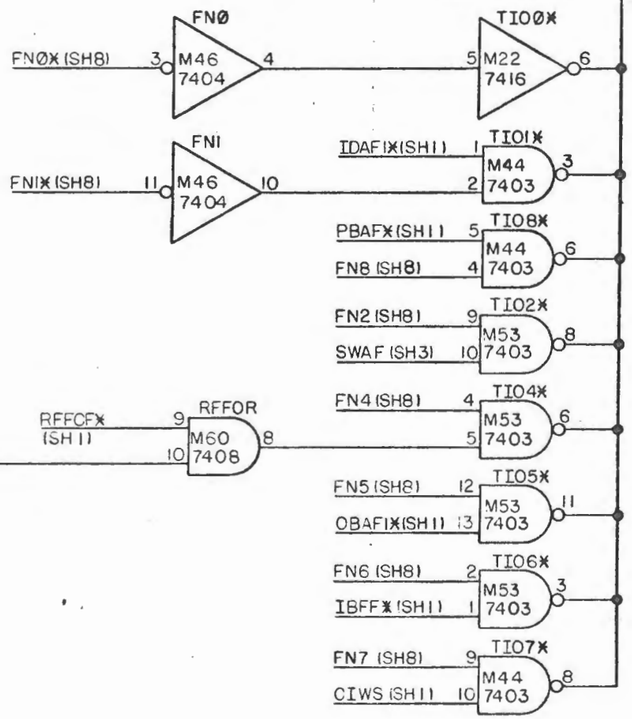
SIZE	DOCUMENT NUMBER	REV
D	010-51-01	B

SCALE | SHT 6 OF 9

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD







INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
PLACE DEC. ANG. ± .125
.X ± .062 2 PLCS ± .03
.XX ± .031 3 PLCS ± .02
.XXX ± .015

DRAWN — DATE
CHECKED — DATE
ENGINEER — DATE
APPROVED — DATE
FIRST USED ON

TITLE LOGIC DIAGRAM
DECISION DATA CARD
RDR PUNCH CONT 001

SIZE	DOCUMENT NUMBER	REV
D	010-51-01	B

SCALE — SHT 7 OF 9

SECONDARY HOPPER SELECT (42)

FEED (38)

SELECT STACKER NO.I (41)

PUNCH (64)

PRINT (65)

(76) SEPERATE PRINT DATA

SINTRF (SH6)M40-8

HEOR (SH7)M61-5

HEOR (SH7)M61-3

CLRINTC (SH6)M32-9

IIF (SH4)M33-3

BOAKF (SH3)M34-8

OVRNF (SH6)M17-1

M54 7476 UNMASKF

M54 7476 SHSF

M63 7402 FEEDX

M45 7476 SSIF

M58 7476 PUNCHF

M58 7476 PRINTF

M65 7476 IIFF

M65 7476 SPDF

RESETB*

M46 7404

RIO2 (SH3)M66-11

TIO2* (SH7)M53-9

TIO4* (SH7)M53-4

TIO5* (SH7)M53-12

TIO6* (SH7)M53-2

ACKF (SH6)M28-6

RIOI (SH3)M66-3

FN (SH7)M46-11

RRERF* (SH5)M42-12

BOOTF (SH3)

TIO7* (SH7)M44-9

TIO8* (SH7)M44-4

CIOT9B

CIOT9A

CIOI

RLOBA (SH4)M50-1

RRERF* (SH5)M42-11

CLSTATB (SH3)M50-5

M55 7404 FN2

M55 7404 FN4

M55 7404 FN5

M55 7404 FN6

M63 7402

M63 7402

M55 7404 FN7

M55 7404 FN8

M64 7402

M46 7404 RESETA*

M57 7404 FN9

M57 7404 FNA

M57 7404 FNB

M57 7404 FNC

M57 7404 FND

M46 7404 RESET

M57 7404 FNF

SINDC (SH7)M28-1

SINDD (SH7)M19-1

RIO3 (SH3)M66-6

FNO (SH7)M46-3

RIO4 (SH3)M66-8

M64 7402 RESET*

M64 7402 CIO0

M64 7402 IORT9

FNO* FNI* FN2* FN3* FN4* FN5* FN6* FN7* FN8* FN9* FNA* FNB* FNC* FND* FNE* FNF*

M56 74154 FNDEC

M36 7404 T9

SCK (SH1)M40-12

T9* 7404 M36

OPTCON

CIO*

RIO*

WIO*

TIO*

M47 7442 TYPDEC

RIO3 (SH3)M66-5

RIO4 (SH3)M66-9

RIOI (SH3)M66-2

RIO2 (SH3)M66-12

WIO (SH4)M52-11

WIOACK (SH4)M42-9

RIO+WIO (SH6)M49-12

TIOACK (SH7)M63-3

IOR (25)

FUNC00 (20) FUNC01 (22) FUNC02 (24) FUNC03 (26)

TYP00 (19) TYP01 (21) ADDXX (28)

339

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE
FIRST USED ON

TITLE LOGIC DIAGRAM
DECISION DATA CARD
RDR PUNCH CONT 001

SIZE D | DOCUMENT NUMBER 010-51-01 | REV B

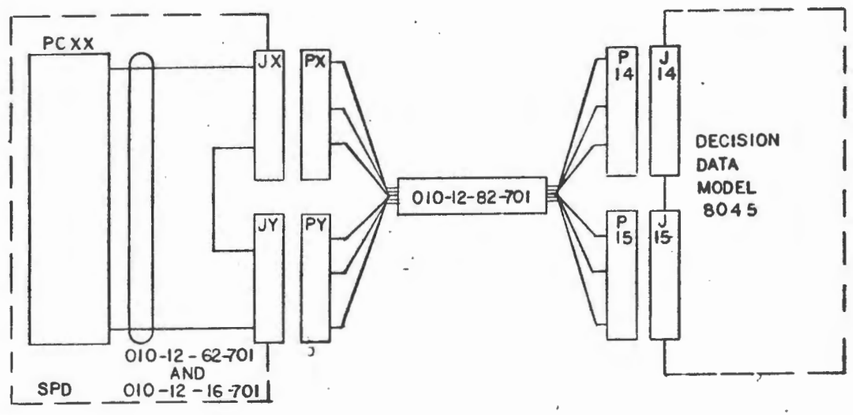
SCALE SHT 8 OF 9

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE		APPD

C		JX
GROUND	GND	1
INPUT DATA AVAILABLE	70	2
ID 0	66	3
ID 12	68	4
ID 7	60	5
ID 4	58	6
GROUND	GND	7
ID 6	62	8
SHS	42	9
BOOT SWITCH	84	10
SSI	41	11
OD 5	51	12
SEP. PRINT	46	13
ID 11	71	14
PUNCH	64	15
OD 4	52	16
PUNCH CHECK	73	17
READY	77	18
ID 2	63	19
ID 1	67	20
PRINT	65	21
OD 9	53	22
PRINT BUF AVAILABLE	43	23
ID 8	39	24
READ CHECK	72	25
		JY
GROUND	GND	1
FEED	38	2
ID 9	40	3
CARD IN WAIT	44	4
OUTPUT BUF AVAIL.	45	5
OD 7	47	6
GROUND	GND	7
OD 11	48	8
OD 2	49	9
OD 6	50	10
OD 8	54	11
OD 0	55	12
OD 3	56	13
OD 1	57	14
ID 5	59	15
ID 3	61	16
READY FOR FEED	69	17
SEC. HOPPER EMPTY	74	18
IB FULL	78	19
NEW DATA REG.	79	20
OD 12	80	21
LOAD OUTPUT BUF.	83	22
GROUND	GND	23
GROUND	GND	24
GROUND	GND	25

010-12-82-701

PX	PIN DESTINATION
1	14-1
2	14-V
3	14-X
4	14-L
5	14-d
6	14-D
7	14-7
8	14-e
9	15-R
10	—
11	14-J
12	15-X
13	15-J
14	14-a
15	15-N
16	15-Y
17	15-T
18	14-K
19	14-A
20	14-N
21	15-P
22	15-Z
23	15-c
24	14-b
25	14-M
PY	
1	15-1
2	14-P
3	14-C
4	14-T
5	15-d
6	15-b
7	15-7
8	15-H
9	15-f
10	15-a
11	15-W
12	15-B
13	15-e
14	15-A
15	14-f
16	14-B
17	14-W
18	15-S
19	14-U
20	14-S
21	15-V
22	15-U
23	15-23
24	15-24
25	14-F



INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
3 PLACE DECIMAL ± .005
2 PLACE DECIMAL ± .01
1 PLACE DECIMAL ± .1
FRACTIONS ± 1/64
ANGLES ± 1°

DRAWN	DATE 8-29-79	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

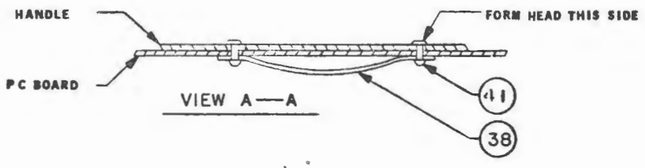
TITLE WIRING DIAGRAM
DECISION DATA CARD
RDR PUNCH CONT.
001

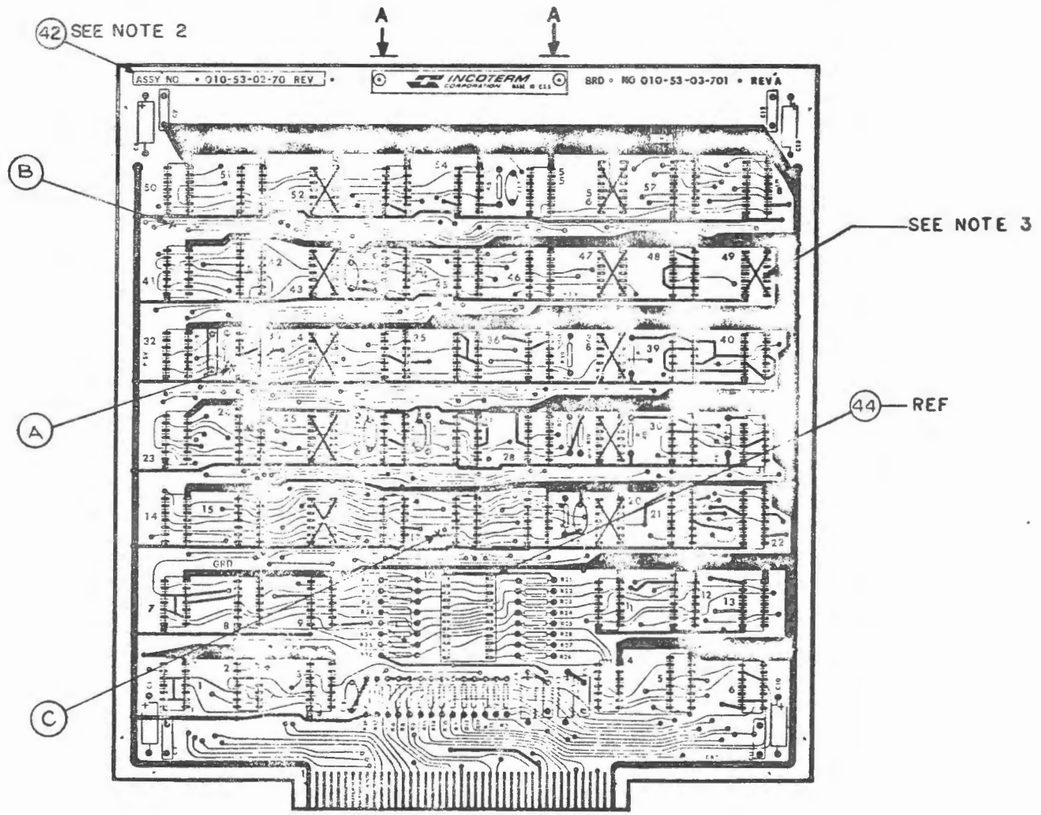
SIZE	DOCUMENT NUMBER	REV
D	010-51-01	B

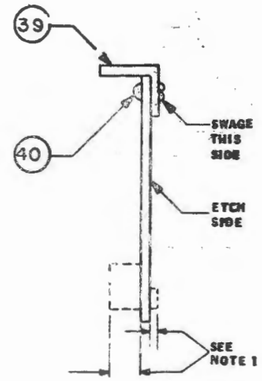
SCALE NONE SHT 9 OF 9

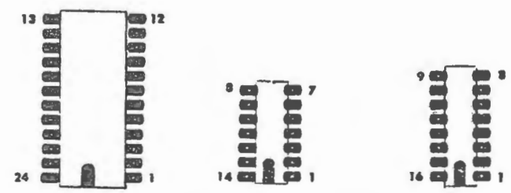
CUT ETCH FROM	
A	R4 TO M33-13
B	BETWEEN EYELETS SHOWN
C	EYELET TO M18-13

REVISION HISTORY					
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RELEASED/RD 857	[illegible]	[illegible]
B		REVISED/ECO 3334 8/19/74	Cullen	
	B1	REVISED/ECO 3355 10/25/74	Cullen	
	B2	REV/ECO 3612 11-14-74	Cullen	
C		REV/ECO 3869 2-6-75	Cullen	









PIN NUMBERING
AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
44	M10 (SOCKET)
43	
42	
41	
40	
39	
38	
37	
36	C9
35	C14—C19
34	C2,3,6,7,11,12
33	C4,5
32	C1,8,10,13
31	
30	R20
29	R29-R36
28	R21-R28
27	R19
26	R1,2,3,5,18,37,38
25	R4
24	R6-R17,39,40,42
23	R41
22	
21	M57,58
20	M10
19	M32
18	M5,12,21,22
17	M42
16	M14,26,28,35,53,54
15	M24
14	M15
13	M4,11
12	M6,13,45
11	M8,9,19,23,50
10	M1,2,3,7,27,30,31, 36,39,40,48
9	M17,33,37,46,55
8	M18,41,44,51
7	
6	
5	
4	
3	
2	
1	

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .433 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 42, AND MARK ASSY NO. 010-53-02-701 AND LATEST ASSY REVISION.
3. PATTERNS MARKED "X" NOT USED, M16, M20, M25, M29, M34, M38, M43, M47, M49, M52, M56

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-53-03-701 REVA

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

DRAWN	Ron Jackson	9/11/74	
CHECKED	Carl French	9/20/74	
APPROVED	[illegible]	9/11/74	

P.C. BOARD ASSY
CARD READER CONT
DOCUMATION 701

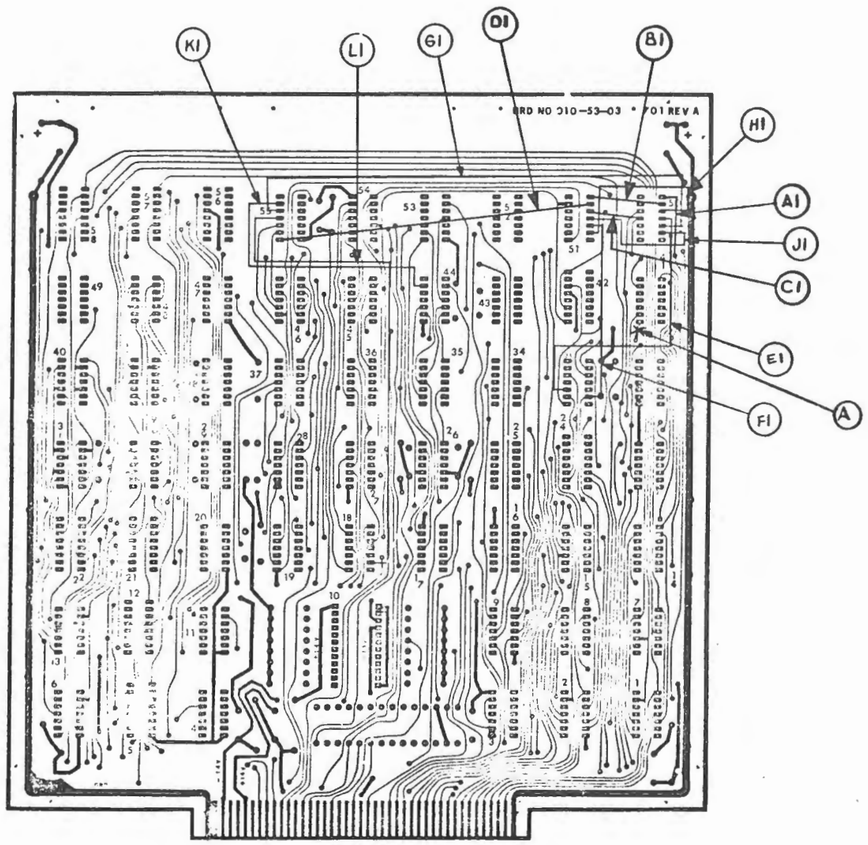
SIZE	DWG NO	REV
D	010-53-02	C

SCALE 1:1 SHEET 1 OF 6

ITEM	DESCRIPTION	QTY
43	WIRE 24 GA SOLID WHITE	7IN.

ADD JUMPER WHERE ITEM 43	
A1	M50-8 TO EYELET SHOWN
B1	M50-9 TO M51-8.
C1	M51-10 TO M50-4
D1	M51-9 TO M55-1
E1	M50-11 TO M33-3
F1	M51-12 TO M33-13
G1	M50-12 TO M55-3
H1	M50-10 TO M51-13
J1	M50-13 TO M51-11
K1	M44-6 TO M55-6
L1	M55-4 TO M18-13

CUT ETCH FROM	
A	M41-1 TO EYELET



ETCH SIDE

REVISION HISTORY			
REV	DESCRIPTION OF CHANGE	CHK	APPD

ITEM NO.	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

INCOTERM CORPORATION and all divisions of the corporation hereby restrict the use of this drawing, data, and the information thereon. INCOTERM Corporation shall not be liable for any use of this drawing, data, and the information thereon, except as may be authorized in writing by INCOTERM Corporation. The recipient of this drawing, by its acceptance, agrees to these restrictions and limits the right to use information obtained from this drawing.

DRAWN	DATE
CHECKED	DATE
ENGINEER	DATE
APPROVED	DATE
FIRST USED ON	

TITLE: CARD READER CONT DOCUMATION

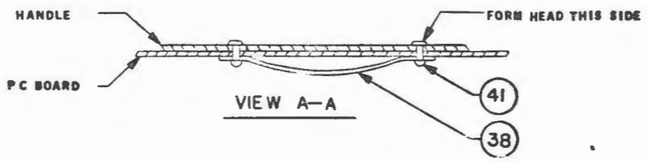
SIZE	DOCUMENT NUMBER	REV
D	010-53-02	C

SCALE 1:1 SHT 2 of 6

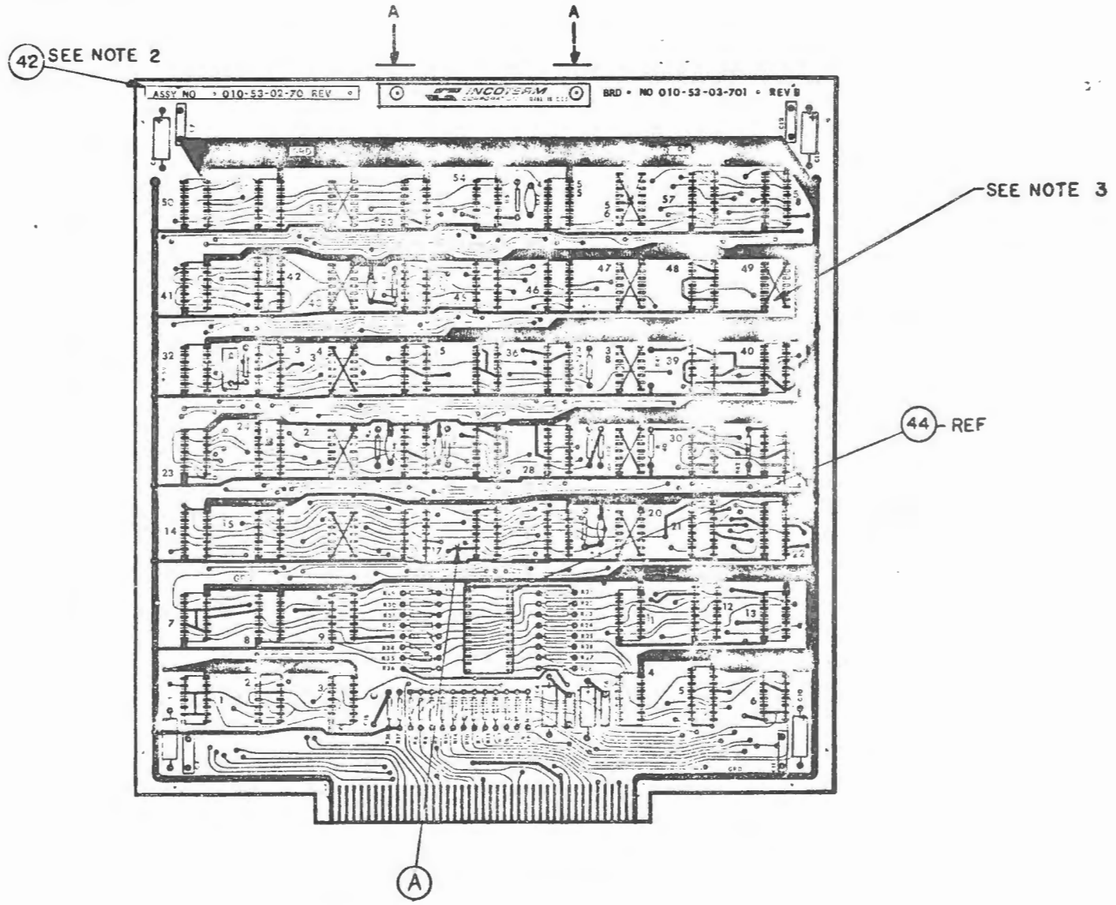
REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

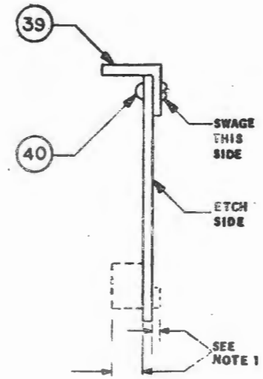
CUT ETCH FROM

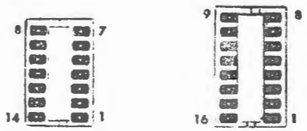
A	M18-13 TO EYELET

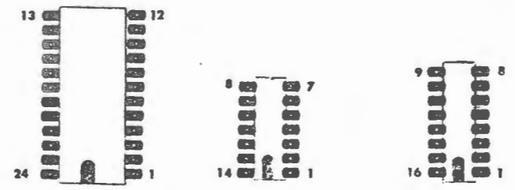


VIEW A–A









PIN NUMBERING

AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
44	MIO(SOCKET)
43	
42	
41	
40	
39	
38	
37	
36	C9
35	C14 — C19
34	C2,3,6,7,11,12
33	C4,5
32	C1,8,10,13
31	
30	R20
29	R29 - R36
28	R21-28
27	R19
26	R1,2,3,5,18,37,38
25	R4
24	R6-R17,39,40,42
23	R41
22	
21	M57, 58
20	M10
19	M32
18	M5,12,21,22
17	M42
16	M14,26,28,35,53,54
15	M24
14	M15
13	M2,11
12	M6,15,45
11	M8,9,19,23,50
10	M1,23,27,30,31,36,39,40,48
9	M17,33,37,46,55
8	M18,41,44,51
7	
6	
5	
4	
3	
2	
1	

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .433 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 42
   AND MARK ASSY NO. 010-53-02-701 AND LATEST ASSY REVISION.
3. PATTERNS MARKED "X" NOT USED, M16, M20, M25, M29, M34, M38, M43, M47, M49, M52, M56

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-53-03-701 REV B

ITEM NO.	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION

DRAWN	TIM SHIVERS 5/9/74
CHECKED	Gerard 5/9/74
APPROVED	K. Hansen 5/9/74

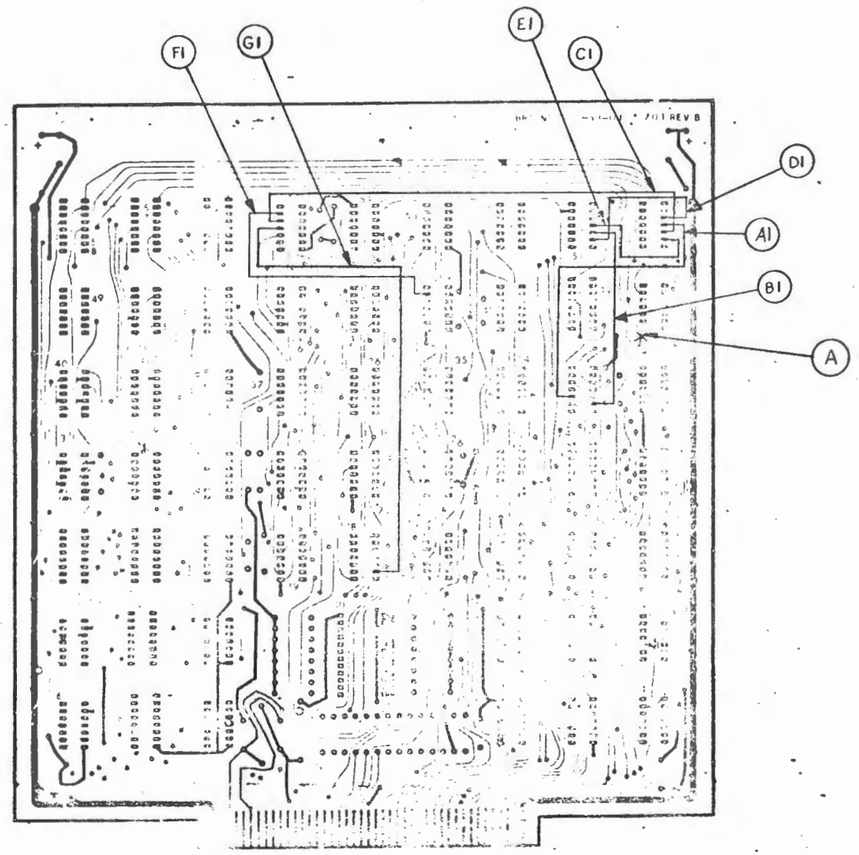
P.C. BOARD ASSY
CARD READER CONT.
DOCUMATION - 701

D 010-53-02 C

SHEET 1 OF 3

ADD JUMPER WIRE (ITEM 43)	
A1	M50-11 TO M33-3
B1	M51-12 TO M33-13
C1	M50-12 TO M55-5
D1	M50-10 TO M51-13
E1	M50-13 TO M51-11
F1	M44-6 TO M55-6
G1	M55-4 TO M18-13

CUT ETCH FROM	
A	M41-1 TO EYELET



- 701

PART ASSY NO	DESCRIPTION

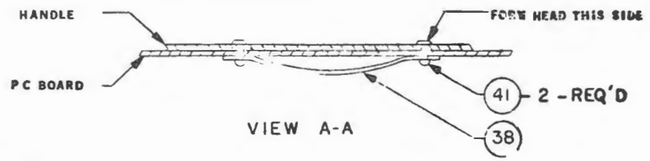
INCOTERM CORPORATION

P. C. BOARD ASSY.
CARD READER CONT
DOCUMATION

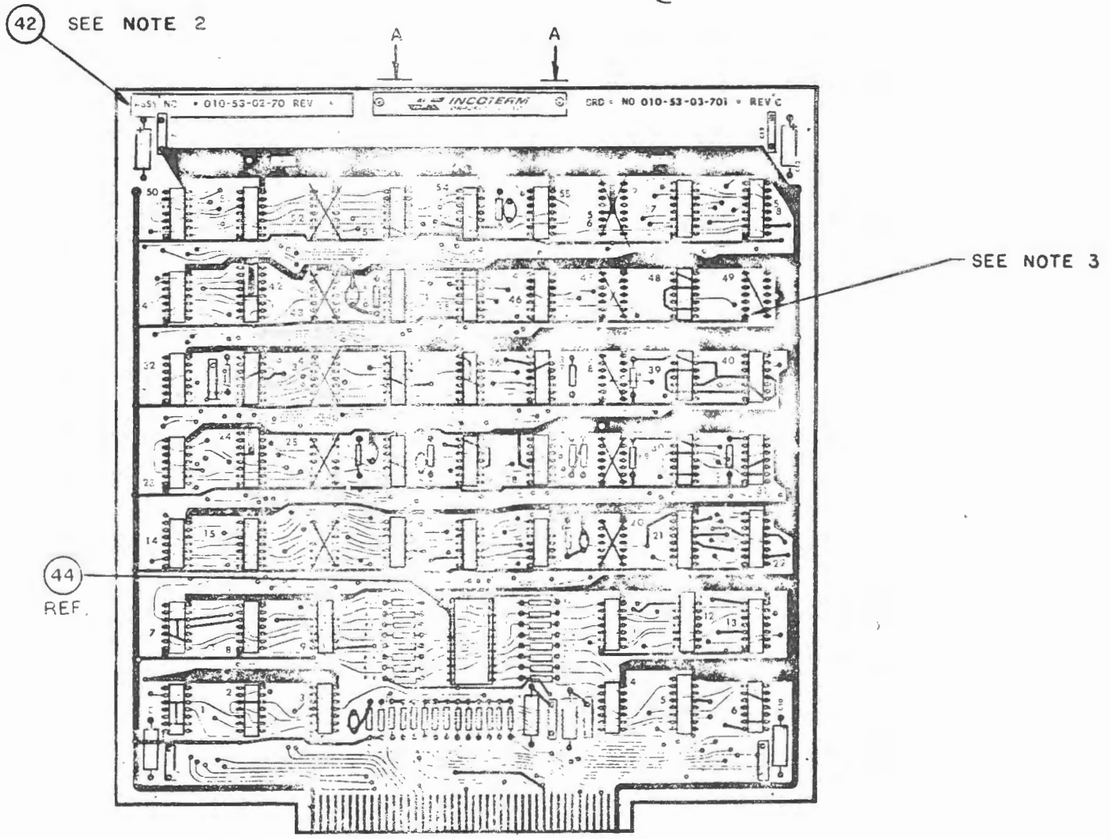
D | 010-53-02 | C

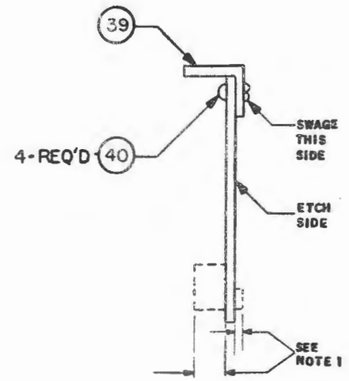
1:1 | 4 | 6

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

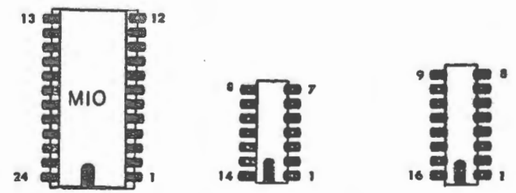


VIEW A-A





ITEM NO.	REFERENCE DESIGNATION
44	M 10 (SOCKET)
43	
42	
41	
40	
39	
38	
37	
36	C 9
35	C 14-19
34	C 2,3,6,7,11,12
33	C 4,5
32	C 1,8,10,13
31	
30	R 20
29	R 29-36
28	R 21-28
27	R 19
26	R 1,2,3,5,18,37,38
25	R 4
24	R 6-17, 39, 40, 42
23	R 41
22	
21	M 57, 58
20	M 10
19	M 32
18	M 5,12,21,22
17	M 42
16	M 14,26,28,35,53,54
15	M 24
14	M 15
13	M 4,11
12	M 6,13,45
11	M 8,9,19,23,50
10	M 1,2,3,7,27,30,31,36,39,40,48
9	M 17,33,37,46,55
8	M 18,41,44,51
7	
6	
5	
4	
3	
2	
1	



PIN NUMBERING
AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .433 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 42
   AND MARK ASSY NO. 010-53-02-701 AND LATEST ASSY REVISION.
3 PATTERNS MARKED 'X' NOT USED (M 16,20,25,29,34,38,43,47 49,52,56.)

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 010-53-03-701 REV C

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — STRATHMORE ROAD

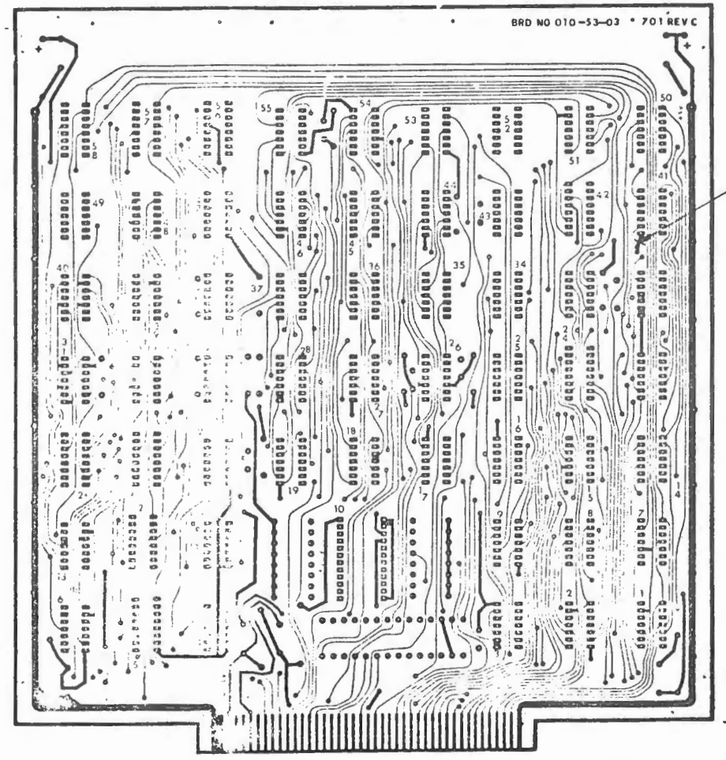
P.C. BOARD ASSY
CARD READER CONT.
DOCUMATION -701

DRAWN Phil — DATE 6/18/74
CHECKED Carl Lund
APPROVED
FIRST USED ON

D | 010-53-02 | C.

SCALE FULL — SHT 5 OF 6

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	



CUT ETCH FROM	
A	M41-1 TO EYELET

ETCH SIDE

ASSEMBLE WITH ARTWORK 010-53-03-701 REV C

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE

DRAWN	Ross Fredericks	11/20/74
CHECKED		DATE
ENGINEER		DATE
APPROVED		DATE
FIRST USED ON		

TITLE: P.C. BOARD ASSY CARD READER CONT. DOCUMATION 701

SIZE	DOCUMENT NUMBER	
D	010-53-02	C
SCALE	SHT 6 OF 6	

REVISIONS			
REV	DESCRIPTION RD#	CHK	APPD
A	RELEASED/RD857	12/7 2-6-75	
B	UPDATED/ECO 3334	8/19/76 CCZ	
C	REV/ECO 3869 2-6-75		

(L) RDDAX 28
(L) TYP00 19
(L) TYP01 21
INS2-4 M20 7442
RDST 7402 M33
RDAT 7402 M33
CIOT2 7402 M33
IIOH 7404 M23
TACK (SH1) M27-5
RSTT2(SH3) M51-12
S/INB04 M2-12
S/INB03 M1-2
S/INB02 (SH2) M1-5
S/INB01 M1-10
S/INB00 M1-13
RSACK (SHI) M27-1
FNL2 M9
FNH2
FNL1
RDATL 7404 M23
RIOBO (SH2) M15-5
R10B (SH3) M46-2
R10B (SH2) M46-5
M33 CINTA 7402
SETERR (SH2) M45-4
R10B (SH3) 9
FINT (SHI) M46-9
(SH2) BOOTF
BORD 7400 M41
CIORD 7400 M41
CPO2L
CLRH (SHI) M44-5
PKCM 7400 M41
PICK 7437 M15
63 PICK
TIO1 (SHI) M36-10
(L) FNC00 20
FNH1 M23
FNL1 M23
RDAT (SHI) M33-6
TIO2 (SHI) M36-12
(L) FNC01 22
FNL2 (SHI) M9-9
(L) FNC02 24
FNH4 M23
TIO4 (SHI) M36-1
FNL4 (SH3) M50-5
CIOT2 (SHI) M33-3
RICT2 (SHI) M37-5
T2 (SH3) M50-11
(H) CPT02N 34
CP02L M9
RESETH 7402 M17
RESETL 7404 M50
(L) IOR 25
CLRVC (SH3) M55-6
CLRH 7400 M44
CIORD
CLRL 7404 M50
CLREOF (SH2) M51-10
OVRUN (SHI) M54-13
(H) CPT09N 36
CP09L 7437 M15
T9 (SH3) M19-5
RF (SHI) M54-3
RCF (SH2) M14-3
(L) FEEDCK 53
R1 560Ω
C14 5000pF
+5V
R2 560Ω
C15 5000pF
M26 FCF 7474
M17-9
FORC (SH2)
S/INB04 (SH2) M2-13
(L) DATSTB 52
M26 DSF1 7474
DSF1A (SH2) M51-2
ENDBOOT (SH2) M37-3
DSDLY (SHI2) M32-3+M32-4
M35 DSF2 7474
(L) BUSY 62
R3 560Ω
C16 5000pF
BSYD 7400 M44
DSDLY* (SH2)
(SH2) BOOTF*
M35 BF 7474
DAVL (SHI) M45-12
EOCL (SHI) M44-9
CP02L
RICT2 7402 M37
RIOBOL (SH2)
(SH2) FORCI
M53 ERDY 7474
DRS 7400 M44
RRDY 7402 M17
M53 DRDY 7474
M45-1 SETERR (SH3)
RDY 7400 M51
UNRDY 7400 M41
UNMASK CK 7476 M42
RDF 7476 M42
CLRH (SHI) M44-5
SELIN 31
SELINH 7404 M19
SELOUT 7400 M18
32 SELOUT
INFS 7404 M19
M28 INF 7474
INT 7402 M46
30 INT
FINT 7402 M46
FINTA
RIOBACK (SH3) M3-4
RIO8ACK (SH3) M3-6
RIO4ACK (SH3) M3-3
RDACK 7403 M27
(SH2) RIOBO
M54 OVRUN 7474
S/INB01 (SH2) M1-9
(SH2) FORC BF
DAVL 7420 M45
EOF* (SH2)
CLRL
TIO1 7403 M36
FNH1
RDST
RSACK 7403 M27
27 ACK
TIOH
TACK 7403 M27
FNH2
TIO2 7403 M36
SACT 7402 M37
EOV 7400 M51
(SH2) EOF*
FNH4
TIO4 7403 M36
R39 1K
+5V
C17 5000pF
R5 560Ω
VCERR (SH3)
M18-1 ENTBO (SH2)
(L) READY 66
RF 7474 M54
CP09L
BF* EOCL 7400 M44
C1 .1μf 12V
C2 .1μf
C8 15μf 12V
C7 .1μf
C10 5μf 12V
C11 .1μf
C12 .1μf
C13 5μf 12V
C4 5μf 25V
C3 .1μf
C5 5μf 25V
C6 .1μf
43 65 85 84 86 75 76 81 82
+14V
-14V
GND

HIGHEST USED REF DES
M58 | R42 | C19 |
REF DES NOT USED
M16, 20, 25, 29, 34, 38, 43, 47, 52, 56, 4

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

"This docume t is the property of INCOTERM Corporation and is to be used on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without written consent, and that no rights to the use thereof are granted except as may be obtained in a sepa ate doc me t. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DRN [illegible] DATE 4/11/74
CHK [illegible] 4/11/74
APP'D [illegible] 4/15/74
NEXT ASSY

TITLE
LOGIC DIAGRAM
CARD READER CONT
DOCUMATION -001

SIZE D | 010-53-01 | REV C
SCALE | SHT 1 OF 3

CRD12 (39) CRD11 (46) CRD00 (41) CRD09 (51) CRD08 (77) CRD07 (68) CRD06 (70) CRD05 (58) CRD04 (73) CRD03 (71) CRD02 (72) CRD01 (60)

M37-2(SH2)END300T

+5V RG 1K R7 1K R8 1K R9 1K R10 1K DSF1A (SH2)

DB07 DB06 DB05 DB04 M17 74175 CLK

M58-3 MUX 3 (SH3) M58-6 MUX 2 (SH3) M58-13 MUX 1 (SH3) MUX 0 (SH3) M58-10

RIN7 RIN6 RIN5 RIN4 7426 M11

R21 R22 R23 R24 4.7K

+14V

ROM M10 MM5230 BO

DAT07 DAT06 DAT05 DAT04 DAT03 DAT02 DAT01 DAT00 7404 M9 M8

6.8K R29 R30 R31 R32 R33 R34 R35 R36

-14V

D/INB07 D/INB06 D/INB05 D/INB04 D/INB03 D/INB02 D/INB01 D/INB00 7403 M2 M3 M7

(SH1) FCFX S/INB04 RCFX S/INB03 S/INB02 (SH1) OVRUN S/INB01 S/INB00 M1 7403

MUX 7 (SH3) M57-4 → 18 INB07

MUX 6 (SH3) M57-7 → 16 INB06

MUX 5 (SH3) M57-12 → 14 INB05

MUX 4 (SH3) M57-9 → 12 INB04

MUX 3 SH3 M58-4 → 10 INB03

MUX 2 (SH3) M58-7 → 8 INB02

MUX 1 (SH3) M58-12 → 6 INB01

4 INB00

(SH1) RDST MUXØ (SH3) M58-9

MUX7(SH3)M57-2

RIN3 RIN2 RIN1 RIN0 7426 M4

R25 R26 R27 R28 4.7K

DB03 DB02 DB01 DB00 M5 74175 CLK

Row7 (SH3) MZ2-13

DEC4 DEC2 DEC1 7420 M13 M6

Row2 (SH3) MZ1-5

Row1 (SH3) MZ1-4

Row1-3 (SH3) MZ1-9

Row4-7 (SH3) MZ2-9

EOFS 7402 M17

M14 EOF 7474

DSF1A (SH1) M15 DSF1 (SH1)

DB4-7(SH2) M12-9

DAVL EOV (SH1) M45-13 M51-2

R4 12K C9 .22uf DSDLY 9601 M32 BSYD G(SH1) M44-2 DSF1B (SH1)

+5V R18 560Ω ENTBOOT (64) EB 7404 M19 RF (SH1) C19 .5000pf

ENTBO M18 7400

RIOB+4 (SH3) CLRL (SH1) CLREOF M51 7400 CLREOF* M50 7404

BOOT 7403 M36 → 29 BOOT

BORD (SH1) M41-2

BOOTF 7474 M28

8F ERDY (SH1) M35-4 M53-2

CRD00 (SH1) DSF1 M37 ENDBOOT 7402

RIOBO 7437 M15

RDATL (SH1)

470Ω R19 R20 120Ω

M37 RIOBOL 7402

RIOB (SH3) → RICT2 (SH1) M37-6

RDACK (SH1) MZ7-10

(L) HOPCK (42) HOPCKM 7404 M9

R37 560Ω R38 560Ω

(L) READCK (67) C18 5000pf

RCF 7474 M14

CP09L (SH1) VCERR* (SH3)

S/INB03 (SH2) MI-1

FORC 7402 M17 (SH1) FCF

FORCI 7404 M9 → ERDY (SH1) M53-3

DAVL (SH1) M45-10

INCOTERM CORPORATION Hayes Memorial Drive Marlborough, Massachusetts 01752

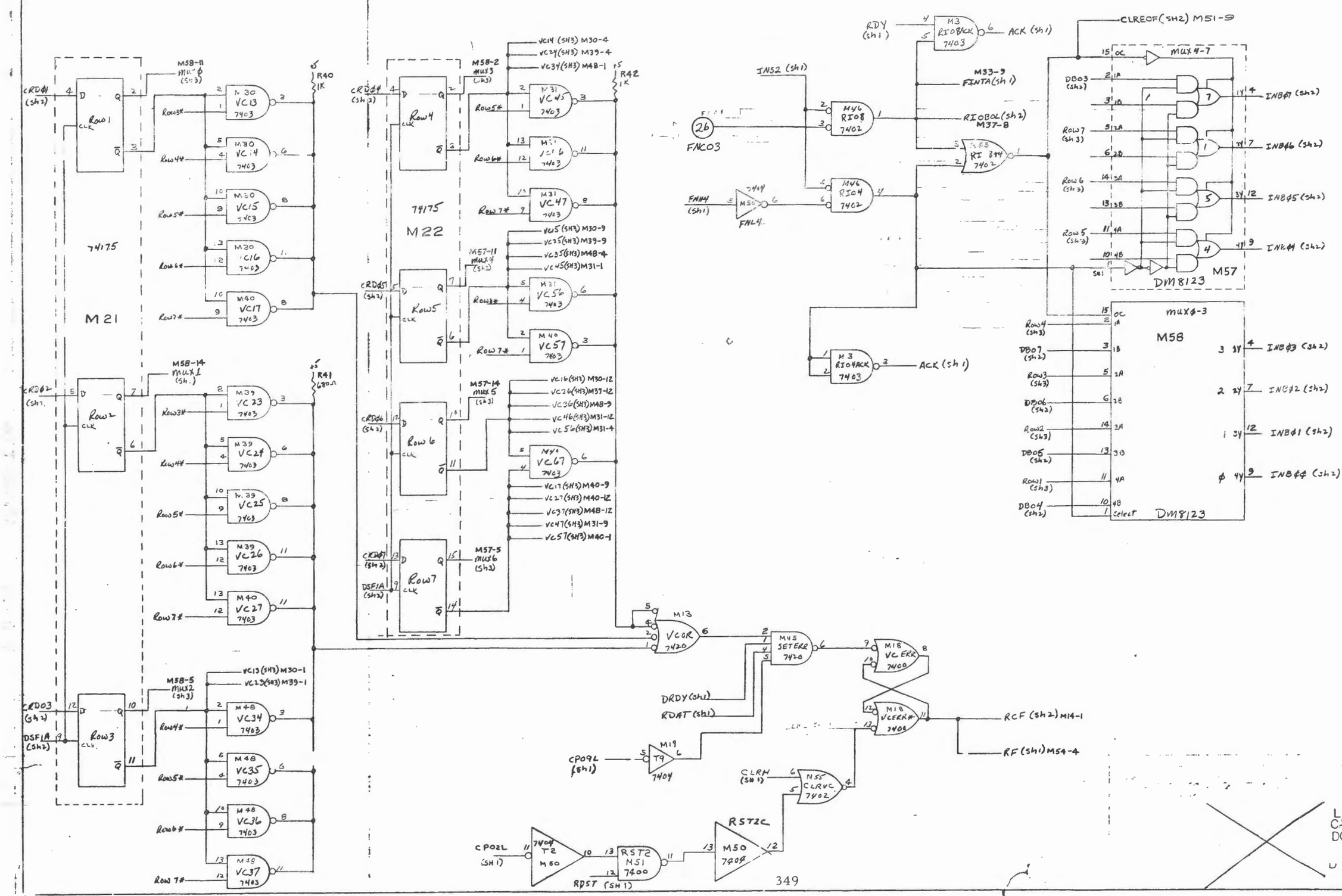
"The document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .005 (3PLCS) .02 (2PLCS) ANGLES 2°

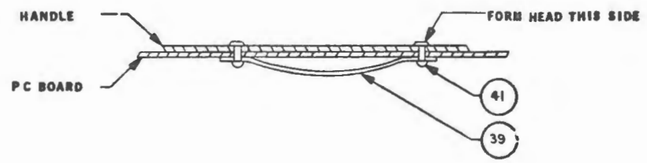
	DATE
ENG	
CHK	
ENG	
APPD	
NEXT ASSY	

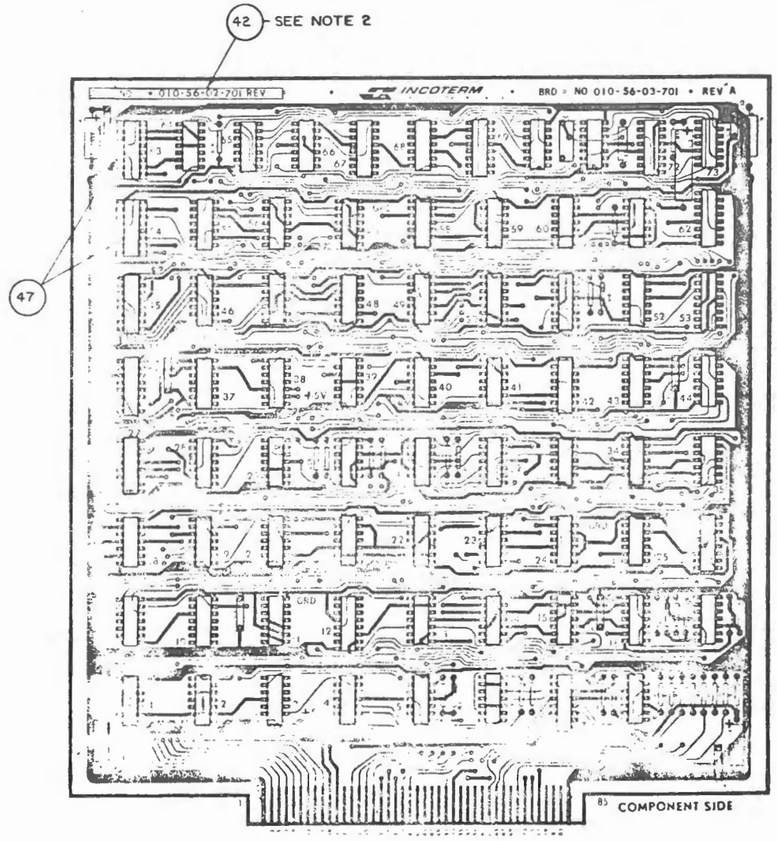
TITLE: LOGIC DIAGRAM CARD READER CONT DOCUMATION 001

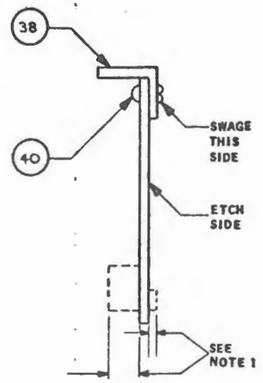
SIZE D | FSCM 01053-01 | REV C | SCALE X | SHT 2 OF 3

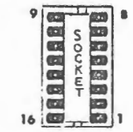

CRD01 (SH2)
Row1 CLK
74175
M21
M58-11 MUX 0 (SH3)
M30 VC13 7403
M30 VC14 7403
M30 VC15 7403
M30 VC16 7403
M40 VC17 7403
Row3*
Row4*
Row5*
Row6*
Row7*
R40 1K
CRD02 (SH2)
Row2 CLK
M58-14 MUX1 (SH3)
M39 VC23 7403
M39 VC24 7403
M39 VC25 7403
M39 VC26 7403
M40 VC27 7403
R41 680Ω
CRD03 (SH2)
DSF1A (SH2)
Row3 CLK
M58-5 MUX2 (SH3)
M48 VC34 7403
M48 VC35 7403
M48 VC36 7403
M48 VC37 7403
VC13 (SH3) M30-1
VC23 (SH3) M39-1
Row4*
Row5*
Row6*
Row7*
74175
M22
CRD04 (SH2)
Row4 CLK
M58-2 MUX3 (SH3)
M31 VC44 7403
M31 VC45 7403
M31 VC46 7403
M31 VC47 7403
VC14 (SH3) M30-4
VC24 (SH3) M39-4
VC34 (SH3) M48-1
R42 1K
CRD05 (SH2)
Row5 CLK
M57-11 MUX4 (SH2)
M31 VC54 7403
M40 VC55 7403
VC44 (SH3) M30-9
VC25 (SH3) M39-9
VC35 (SH3) M48-4
VC45 (SH3) M31-1
CRD06 (SH2)
Row6 CLK
M57-14 MUX5 (SH3)
M41 VC64 7403
M41 VC65 7403
M41 VC66 7403
M41 VC67 7403
VC16 (SH3) M30-12
VC26 (SH3) M39-12
VC36 (SH3) M48-9
VC46 (SH3) M31-12
VC56 (SH3) M31-4
VC17 (SH3) M40-9
VC27 (SH3) M40-12
VC37 (SH3) M48-12
VC47 (SH3) M31-9
VC57 (SH3) M40-1
CRD07 (SH2)
DSF1A (SH2)
Row7 CLK
M57-5 MUX6 (SH3)
RDY (SH1)
M3 RIOBACK 7403
ACK (SH1)
INS2 (SH1)
M33-9 FINTA (SH1)
M46 RIO8 7402
RIOBCL (SH2) M37-8
RI 8+4 7402
FNC03
FNH4 (SH1)
FNL4
M46 RIO4 7402
M3 RIO4ACK 7403
ACK (SH1)
CLREOF (SH2) M51-9
MUX4-7
DB03 (SH2)
Row7 (SH3)
Row6 (SH3)
Row5 (SH3)
INB#7 (SH2)
INB#6 (SH2)
INB#5 (SH2)
INB#4 (SH2)
M57
DM8123
MUX#-3
M58
Row4 (SH3)
DB07 (SH2)
Row3 (SH3)
DB06 (SH2)
Row2 (SH3)
DB05 (SH2)
Row1 (SH3)
DB04 (SH2)
INB#3 (SH2)
INB#2 (SH2)
INB#1 (SH2)
INB#4 (SH2)
DM8123
M13 VCOR 7420
M45 SETERR 7420
M18 VCERR 7400
M18 VCERR# 7400
DRDY (SH2)
RDAT (SH1)
M19 T9 7404
CP09L (SH1)
CLRM (SH1)
M55 CLRVC 7402
RCF (SH2) M14-1
RF (SH1) M54-4
RST2C
CP02L (SH1)
7404 T2 M50
RST2 M51 7400
RPST (SH1)
M50 7404
LOGIC DIAGRAM
CARD READER CONT
DOCUMATION
D 30-53-01
E
C
3
3

REVISION HISTORY				
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
A	RELEASED/RD#878		
B	REVISED/ECO 3615		
B1	REV CHG 3632 11-25-74		









PIN NUMBERING
AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
50	R32
49	
48	RIO
47	M54,63(SOCKET)
46	
45	
44	
43	
42	
41	
40	
39	
38	
37	C3
36	C1,4,5,6,7,8,9,10
35	C2
34	C11,12,13,14
33	R1,2,5-8,11-16,19-27,29,30,31
32	R28
31	R17
30	R9
29	R3,4
28	R18
27	M54,63
26	M27,36,45
25	M42
24	M72
23	M9,10
22	M57
21	M26,51,53,67,69
20	M1,38,40,50,66,73
19	M20
18	M7,12
17	M41
16	M37,43
15	M4,17,30
14	M23,29,44,46
13	M61
12	M14,18,19,21,32,34,55,58
11	M1,2,5
10	M8,13,15,16,25,33,47,49,52,65,70,71
9	M3,6,22,24,28,31,35,39,48,56,59,60,61,64,68
8	
7	
6	
5	
4	
3	
2	

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 42 AND MARK ASSY NO. 010-56-02-701 AND LATEST ASSY REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK NO. 010-56-03-701 REV A

ITEM NO.	PART ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION — 5 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from any other source.

DRAWN		
CHECKED	Rick Frank	8/26/74
ENGR APPR		8/26/74
MFG APPR		8/26/74
NEXT ASSY USED ON		

P.C. BOARD ASSY
FLOPPY DISK CONT
FOR SPD 10/20 & 20/20
701

SIZE D | DOCUMENT NUMBER 010-56-02 | REV B1

SCALE 1:1 | SHT 1 OF 1

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
A		RELEASED/RD#878		

BOOTSTRAP (SH6) — CBA — M6 7400 — STPSTB(SH 7) 13 — DEVSELBI — M6 7400 — 11 — (39) (21A)

M14 7404 — DEVSFLAI

FUNCDEC4I (SH 1) 4 — FUNCDEC 5I (SH 1) 5 — M6 7400 — 6 — PARB (SH 7) M23-4 — STEPAI

RWLS (SH 7) 11 — LD BUF — M13 7402 — 13 — SRL (SH3)M9-6 — SRU (SH3)M10-6 — SLD (SH3)M3-9

FUNCDEC3I (SH 1) 8 — M13 7402 — 10 — CBS (SH 2)M51-12 — PARA(SH7)M31-5 — DEVSELA

STEPI — M6 7400 — 8 — (41)

INT (SH7)M49-6 — M13 7402 — AUTOI(SH 7)M32-9 — AUTOACKI(SH 7) M59-10 — AUTO

CIO — M14 7404 — 6 — RWGAI (SH 7)M24-12 — FARB (SH7)M23-3

RWLSI(SH7) — STOREI — M 24 7400 — 6 — SSTA (SH3) M29-1

M15 7402 — STOREA

TYP00 (19) — TYP01 (27) — ADXX (28) — M12 7442 TYPDEC — WIOI — RIOI — CIOI — TIOI — SACKA (SH7) M49-11 — RIO (SH3)M3-13 — TIOACK (SH2) M52-8

CIOBOOT — M15 7402 — FUNCDEC 7I (SH 1) 12 — CIOBOOTI — M14 7404 — 4 — (70) — CBS (SH2) M51-9

FUNDE1 — M58 7404 — 8 — RSTI(SH 1) — M67 7476 J S Q CK MASK K Q — 15 SINT (SH7) M49-2

TACK 1 (SH 2) M16-12 — PTI3I(SH 7) 8 — M15 7402 — 10 — CIOT

FUNDE2 — M58 7404 — 10 — TACK 2 (SH 2) M8-2

+5V — R4 1K — M14 7404 — SPRE (SH6)M61-2 — SPR (SH6)M61-13 — INTRA(SH 7)M41-9 — RSTAI

GAP(SH 6)M73-11 — READ(SH 6)M53-8 — T.O(SH2)M51-3 — INDEXF(SH 6)M26-3 — GAP CLOCK (SH6)M73-13 — LOAD CMD (SH3)M11-13 — MASK (SH 1)M67-2 — STACT (SH 3)M11-1

FUNC0 — M4 7414 — 20 — PARB (SH7) M23-5 — RWSTORAGE (SH7) M42-5

FUNC 1 — M4 7414 — 22 — RWSTORAGE (SH7) M42-4

FUNC2 — M4 7414 — 24

FUNC 3 — M4 7414 — 26 — RWGAI (SH7) M24-13

A M7 7442 FUNC DEC-I — DEVSELA (SH1)MI3-8 — TACK 3I (SH2)M8-5 — TACKAI (SH2)M8-11 — STEPAI (SH 1)M6-4 — TACK BI (SH2)M8-9 — STEPAI (SH 1)M6-5 — C10 BOOT (SH 1)MI5-12 — TACK 8 (SH2)MI6-2

CIORA — MI3 7402 — CIORI — M14 7404 — M5 7403 — RSTA — PTI3 (SH7) 13 — M41 7437 — RSTI

RESET (25) — R3 1K — +5V

WPLA — MI5 7402 — WPLI — M24 7400 — MC2 (SH4)M27-9 — MC1 (SH 4)M36-9 — WPL (SH 4)M55-13 — MCØ (SH 4)M45-9

TACK 6 (SH2) MI6-9 — RWLSI(SH 7)

FUNC2I — M3 7400 — RWSTORAGE (SH7) M42-6

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTORS ARE IN OHMS, 1/4W, ±5%.
   B. ALL CAPACITORS ARE IN MICROFARADS.
   C. ALL DIODES ARE TYPE IN4148.
2. THE FOLLOWING I/O PINS ARE PREASSIGNED AND MUST BE USED FOR THE FUNCTIONS DESCRIBED ONLY:
   A. +5V PINS 1&2 — C. +12V PINS 75 & 76
   B. GND PINS 85&86 — D. -13V PINS 81 & 82

001

HIGHEST REF DES USED					
R32	C14		M73		
REF DES NOT USED					

ITEM NO	PART-ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION — 6 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corp. unless with out its written consent, and that no right is granted to do so use or disclose any thing contained in this document. This restriction does not limit the right to use information obtained from other sources.

DRAWN — CHECK — APPROVED — FIRST USED ON

FLOPPY DISK CONT LOGIC DIAGRAM FOR SPD 10/20 & 20/20

SIZE D — DOCUMENT NUMBER 010-56-01 — REV A

SCALE X — SHT 1 OF 7

351

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+5V
R5 365 1/8W ±1% — R6 365 1/8W ±1%
H=DEVICE FUSY (67) → M17 7414 (DEV BUSY I)
R7 365 ±1% 1/8W — R8 365 ±1% 1/8W
(112 A) TRKOI (65)
RWLSI (SH 7)
M25 7402 (BUSY) → RWGO (SH 7) M33-3
FUNCDEC 41 (SH1I) → M8 7402 (TACKA I)
FUNCDEC 5I (SH 1I) → M8 7402 (TACK BI)
M25 7402 (TACKA)
TTOI (SH 1I) → M52 7402 (TIOACK) → M58 7404 (TIOACK I) → ACK INH (SH 7) M59-13
M43 7420 (TACK) H=ACK
FUNCDEC 3I (SH1I) → M8 7402 (TACK 3I) H=ACK → M25 7402 (TACK B)
R11 365 ±1% 1/8W — R12 365 1/8W ±1%
H=DEV ERROR (63) (15A)
FUNCDEC2I (SH 1I) → M8 7402 (TACK2)
FUNCDEC8I (SH 1I) → M16 7402 (TACK 8)
M16 7402 (TACKC)
R17 47K — C2 33μf
RWCMD (SH7)
M72 74123 TIME
TOS → M7I 7402 → RWCMDI 3 (SH6)
M5I 7476 T.O
PT9 (SH7)
RWGO (SH7)
RSTI (SH 1I)
CMDRI (SH6) M7I-12
RSEARCH (SH6) M35-9
FUNCDEC 6I (SH 1I) → M16 7402 (TACK 6)
CIO BOOT (SH 1I)
PT 13 (SH7)
DEV SELA (SH 1I)
M5I 7476 CBS
RESET (SH6)
WRITE AI (SH6) M44-1
L=PROTECT (62)
R13 365 ±1% 1/8W — R14 365 ±1% 1/8W
M17 7414 PRO
FUNCDECII (SH1I) → M16 7402 → M34 7404 (TACKD)
TACK I
NCR* (SH5) → M68 7400 (TACKIA)
SBACKA (SH7) M68-10
INTGA (SH6) M52-3
SRSI (SH 3) M20-4
SRAB (SH3) M46-1
BOOT F (SH6) M62-13
READ ERROR M69 7476
DTI (SH5) SSI (SH6) M43-5
SPRSI (SH6)
CCCI (SH5) → M70 7402 (RDERRA)
RGI (SH6) → M35 7400 (RDERRB)
R15 365 ±1% 1/8W — R16 365 ±1% 1/8W
XFDBKI I (84)
M17 7414 XFDBK
R31 365 1/8W ±1% — R30 365 1/8W ±1%
BOOT GO (77)
M4 7414 (BOOT GO)
M19 7404 (BOOTGOI)
READ (SH6) M53-12
SRAA (SH3) M28-13
RIO (SH3) M3-12
SST (SH3) M29-5

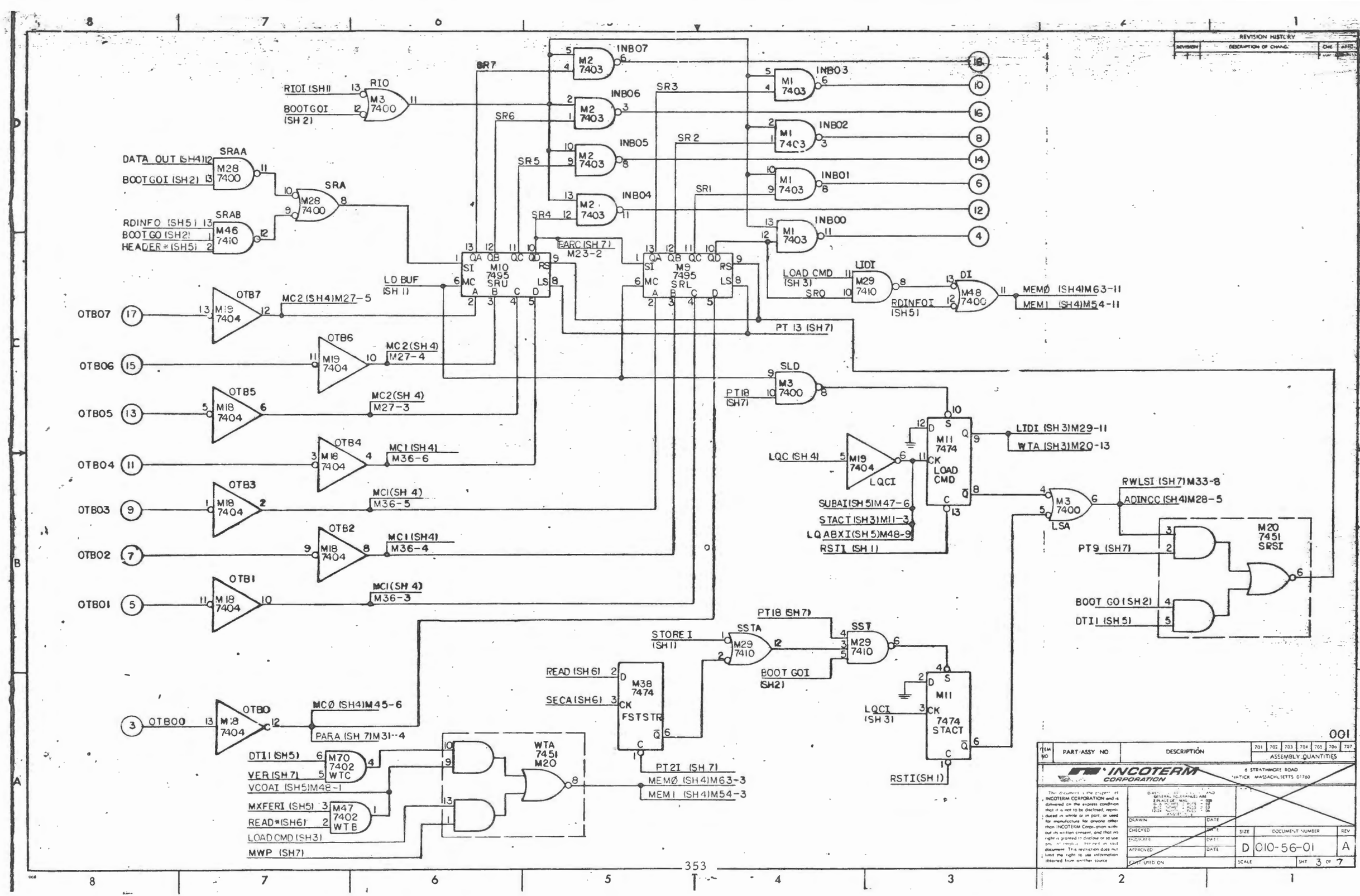
001

ITEM NO	PART ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 6 FAIRMORE ROAD

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN	DATE	SIZE	DOCUMENT NUMBER	REV
CHECKED	DATE	D	010-56-01	A
ENGINEER	DATE			
APPROVED	DATE			
NEXT USED ON		SCALE NONE	SHT 2 OF 7	


REVISION HISTORY
RIOI (SH1)
BOOTGOI (SH 2)
RIO
M3 7400
SR7
SR6
SR5
SR4
SR3
SR2
SR1
INB07
INB06
INB05
INB04
INB03
INB02
INB01
INB00
M2 7403
M1 7403
DATA OUT (SH4)12
SRAA
M28 7400
SRA
RDINFO (SH5) 13
SRAB
M46 7410
HEADER* (SH5) 2
EARC (SH7) M23-2
LD BUF (SH 1)
M10 7495 SRU
M9 7495 SRL
LOAD CMD (SH 3)
SRO
LIDI
M29 7410
DI
M48 7400
RDINFOI (SH5)
MEMØ (SH4)M63-11
MEM1 (SH4)M54-11
PT 13 (SH7)
OTB07
OTB06
OTB05
OTB04
OTB03
OTB02
OTB01
OTB00
M19 7404
M18 7404
M8 7404
MC2 (SH4)M27-5
MC2(SH 4) M27-4
MC2(SH 4) M27-3
MC1 (SH4) M36-6
MC1(SH 4) M36-5
MC1 (SH4) M36-4
MC1 (SH 4) M36-3
MCØ (SH4)M45-6
PARA (SH 7)M31--4
SLD
PT18 (SH7)
M3 7400
LQC (SH 4)
LQCI
M11 7474 LOAD CMD
SUBAI (SH 5)M47-6
STACT (SH3)M11-3
LQ ABXI (SH 5)M48-9
RSTI (SH 1)
LIDI (SH 3)M29-11
WTA (SH3)M20-13
LSA
RWLSI (SH7)M33-8
ADINCC (SH4)M28-5
M20 7451 SRSI
PT9 (SH7)
BOOT GO (SH2)
DTI1 (SH 5)
PT18 (SH7)
STORE I (SH1)
SSTA
SST
BOOT GOI (SH2)
READ (SH 6)
SECA (SH6)
M38 7474 FSTSTR
LQCI (SH 3)
M11 7474 STACT
RSTI (SH 1)
PT2I (SH 7)
MEMØ (SH4)M63-3
MEM1 (SH4)M54-3
DTI1 (SH5)
VER (SH 7)
VCOAI (SH5)M48-1
MXFERI (SH5)
READ* (SH6)
LOAD CMD (SH3)
MWP (SH7)
M70 7402 WTC
M47 7402 WTB
WTA 7451 M20
001
ITEM NO
PART/ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760
DRAWN
CHECKED
ENGINEER
APPROVED
DATE
SIZE
DOCUMENT NUMBER
REV
D
010-56-01
A
SCALE
SHT 3 OF 7
353

H=CLOCK

WPL(SH 4) 1 — M28 7400 — 3 — SPRI (SH6) 10 — M37 7420 — 8 — ADINC
PTI3(SH 7) — 2 — ADINCA — CINCI (SH5) 9
LSA (SH3) 5 — M28 7400 — 6 — 12
4I — ADINCC

RCAC (SH5)M37-2
CCCI (SH5)M64-1
9 M55 7404 8 UQDI*

+5V
R 18 4.3K

H=DATA OUT
S RAA (SH3)M28-12
BORC (SH5)M65-12
DIFAI (SH5)M57-10

DI(SH 3)
WTA(SH 3)

MEMO M63 SIG 2602 — AD9 AD8 AD7 AD6 AD5 AD4 AD3 AD2 AD1 AD0 — WT DI CS
MEMI M54 SIG 2602 — AD9 AD8 AD7 AD6 AD5 AD4 AD3 AD2 AD1 AD0 — WT DI CS

LQA
LQB
LQC
MQA
MQB

MQAI (SH5)M55-3
S DATA (SH5)M64-10
S DATA (SH5)M64-9
SECT FLD (SH5)M46-5
DATA (SH 5)M67-9

LMAXI 11 — M46 7410 — 8
LQCI (SH3)M19-5 10
LQABX (SH5)M47-11 9
LQAEX (SH5)M47-12

DTII (SH5) 9 — M49 7402 — 10 — DATA (SH 5)M67-6
8 — CLBACK — BACK(SH 7)M69-1
LMAXI(SH5)M19-3

MQC — RCAC(SH 5)M37-4
MQD — CCB(SH 5)M54-13
UQA

UQD UQC UQB

74163 M27 MC2 — CO QD QC QB QA ENT — CK D C B A — L 9
74163 M36 MC1 — CO QD QC QB QA ENT — CK D C B A — L 9
74163 M45 MC0 — CO QD QC QB QA ENT — CK D C B A — L 9

SPR*(SH 6)
L=CLEAR
WPLI(SH1)

OTB7(SH3)
OTB6(SH3)
OTB5(SH3)
OTB4(SH 3)
OTB3(SH 3)
OTB2(SH 3)
OTBI(SH 3)
OTBØ(SH 3)

WPL
13 M55 7404 12 ADINCA(SH 4) M28-1

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

001

ITEM NO	PART/ASSY. NO.	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
6 STRATTMORE ROAD
WATICK, MASSACHUSETTS 01760

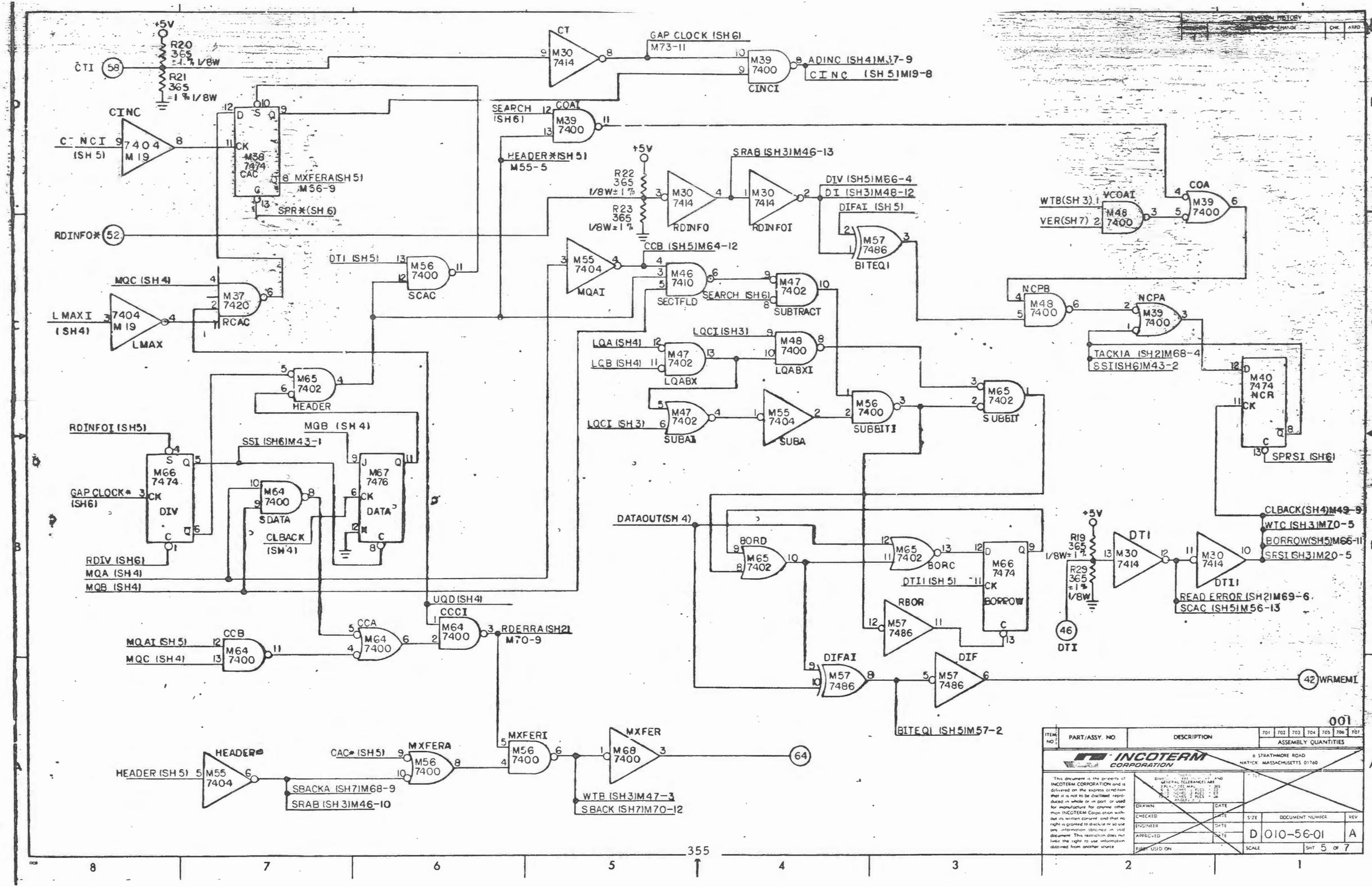
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN — DATE
CHECKED — DATE
ENGINEER — DATE
APPROVED — DATE
FIRST USED ON

TITLE

SIZE	DOCUMENT NUMBER	REV
D	010-56-01	A

SCALE — SHT 4 OF 7


+5V
R20 365 ±1% 1/8W
R21 365 ±1% 1/8W
CTI (58)
CT
M30 74i4
GAP CLOCK (SH6) M73-11
M39 7400
CINCI
ADINC (SH4)M37-9
CINC (SH5)MI9-8
CINC
CINCI (SH5)
7404 M19
M38 7474 CAC
MXFERA(SH5) M56-9
SPR*(SH6)
SEARCH (SH6)
COAI
M39 7400
HEADER*(SH5) M55-5
+5V
R22 365 1/8W±1%
R23 365 1/8W±1%
M30 7414
RDINFO
RDINFOI
SRAB (SH3)M46-13
DIV (SH5)M66-4
DI (SH3)M48-12
DIFAI (SH5)
M57 7486
BITEQI
RDINFO* (52)
DTI (SH5)
M56 7400
SCAC
CCB (SH5)M64-12
M55 7404
MQAI
M46 7410
SECTFLD
SEARCH (SH6)
M47 7402
SUBTRACT
MQC (SH4)
M37 7420
RCAC
LMAXI (SH4)
LMAX
LQA (SH4)
LQB (SH4)
M47 7402
LQABX
LQCI(SH3)
M48 7400
LQABXI
LQCI (SH3)
SUBAI
M55 7404
SUBA
M56 7400
SUBBITI
M65 7402
SUBBIT
WTB(SH3)I
VER(SH7) 2
VCOAI
M48 7400
COA
M39 7400
NCPB
NCPA
TACKIA (SH2)M68-4
SSI(SH6)M43-2
M40 7474 NCR
SPRSI (SH6)
M65 7402
HEADER
RDINFOI (SH5)
MQB (SH4)
SSI (SH6)M43-1
M66 7474 DIV
M64 7400
SDATA
M67 7476 DATA
GAP CLOCK* (SH6)
CLBACK (SH4)
RDIV (SH6)
MQA (SH4)
MQB (SH4)
DATAOUT(SH4)
BORD
M65 7402
BORC
M66 7474 BORROW
DTII (SH5)
RBOR
M57 7486
+5V
R19 365 1/8W±1%
R29 365 ±1% 1/8W
DTI
M30 7414
DTII
CLBACK(SH4)M43-9
WTC (SH3)M70-5
BORROW(SH5)M66-11
SRSI (SH3)M20-5
READ ERROR (SH2)M69-6
SCAC (SH5)M56-13
46 DTI
DIFAI
DIF
M57 7486
42 WRMEMI
BITEQI (SH5)M57-2
UQD (SH4)
CCCI
M64 7400
RDERRA (SH2) M70-9
MQAI (SH5)
MQC (SH4)
CCB
CCA
HEADER*
HEADER (SH5)
M55 7404
SBACKA (SH7)M68-9
SRAB (SH3)M46-10
CAC* (SH5)
MXFERA
M56 7400
MXFERI
MXFER
M68 7400
64
WTB (SH3)M47-3
SBACK (SH7)M70-12
001
ITEM NO.
PART/ASSY. NO
DESCRIPTION
701 702 703 704 705 706 707
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760
This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source
DRAWN
CHECKED
ENGINEER
APPROVED
NEXT USED ON
DATE
SIZE
DOCUMENT NUMBER
REV
D 010-56-01 A
SCALE
SHT 5 OF 7
355
8 7 6 5 4 3 2 1
A B C D

H=SECTOR (66)
5V
R24 365 1/8W ±1%
R25 365 1/8W ±1%
M17 7414 SECTOR
74175
M62
SEC 1
SEC 2
BOOT GO (SH 2)
BOOT GO
RESET
M44 7410 SECAI
PT9 (SH7)
M58 7404 SECA
FSTSTR(SH3) M38-3
SEC B
M71 7402
RDIV
M60 7400
PT13(SH7)
DIV (SH 5) M66-1
TURT4 (37)
M4 7414 TURT4I
+14V (75)
R10 680
C1 .1
R9 220
WRITED (SH 6) M24-9
L = RESET
WRITE(SH 6)M53-3
CBS (SH2)M51-8
RGWT (SH6)
RWGD* (SH6)
PT13(SH7)
M71 7402 SPRINH
M61 7400 SPREI
RSTAI (SH 1)
M61 7400 SPRE
T.O. (SH2)
M71 7402 CMDRI
RWD STORAGE (SH7)M42-1
PT13 (SH7)
M60 7400 SPRSI
NCR (SH 5)M40-13
READERROR (SH 2)M69-8
RMCI
M61 7400
RWGT (SH6)
RSTAI (SH 1)
M61 7400 SPR
M60 7400 SPRI
11 ADINC (SH4) M37-10
PT98 (SH 7)
BOOTSTRAP
M5 7403
CBA (SH 1) M6-1 (29)
SPR*
M55 7404
CAC(SH 5)M38-13
MCØ(SH 4)M45-1
MC1(SH 4)M36-1
MC2(SH 4)M27-1
FSTSTR (SH3)M38-2
M53 7476 READ
SEARCH(SH6)
M52 7402 RGTI
M34 7404 RGT
M14 7400
RGTI
(68)
RDERRB(SH2) M35-2
BOOTCOI (SH2)
WTB (SH3) M47-2
RSTI (SH 1)
RGTI (SH6)M62-11
COAI (SH5)M39-12
SRCHCMD(SH7)
M26 7476 SEARCH
SUBTRACT (SH 5)M47-8
RWGD(SH 6)M73-1
RWCMD (SH7)
SSI
M43 7420
NCR* (SH5)
READERROR* (SH2)
DIV (SH5)
T.O.* (SH2)
M35 7400 RSEARCH
WRTCMD (SH7)
M52 7402 READA
M34 7404 READB
RWGT
M35 7400
RMCI (SH6)M61-9
SCMDINH (SH7)M33-12
SPRINH (SH6)M71-5
PT8 (SH7)
M73 7474 RWGD
SPRINH (SH6)M71-6
SEARCH(SH 6)
RWRT (SH6)M44-5
WRITED
M24 7400
(53) (23A1)
RESET (SH 6)
M53 7476 WRITE
WRITEB
M35 7400
WRTCMD (SH7)
PRO (SH2)
M44 7410 WRITEAI
M34 7404 WRITEA
M34 7404 INTGOI
INTCMD(SH7)
BOOTGO (SH2)
M52 7402 INTGA
INTCO
M25 7402
INTCMD (SH7)
WRITE (SH6)
M44 7410 RWRT
RESET(SH6)
C3 .047
10K R32
33K 2%
+5V
M72 74123 GAP
CT (SH5)
M73 7474 GAP CLOCK
DIV (SH5) M66-3
RSTI(SH 1)
H=INDEX (71)
+5V
R26 365 1/8W ±1%
R27 365 ±1% 1/8W
M17 7414 INDEXI
M26 7476 INDEXF
RSTI(SH 1)
(1) (2)
C4 .1μf
C5 .1μf
C6 .1μf
C7 .1μf
C8 .1μf
C9 .1μf
C10 .1μf
C11 5μf
C12 5μf
C13 5μf
C14 5μf
+5V
(85) (86)
GND

PART ASSY NO	DESCRIPTION

INCOTERM CORPORATION

D 010-56-01 A

SHEET 7 OF 7

001

356

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+5V
R1 365 ±1% 1/8W
R2 365 ±1% 1/8W
INTSI (72)
M17 7414
INTSII
M60 7400
M50 7474 INTSDI
ADXX(SH 1) 11
SACKA
M49 7402
13 SACKAI(SH 7)M32-11
SELOUT
M59 7400
32
TIOACKI(SH2) 13
M59 7400
ACKINH
AUTOACKI
SINT
M49 7402
SENTI
M58 7404
MASK(SH 1)
M50 7474 INTF
M49 7402
INT
30
SELIN (31)
SELINI
M58 7404
AUTO(SH 1)
M32 7404
AUTOI
RSTAI (SH 1) 9
M41 7437
INTRA
STPSTB (SH7) 4
M41 7437
INTR
ISH 2)BOOT GO 10
HEADER# (SH 5) 9
SBACKA
M68 7400
MXFERI (SH5)
SBACK
M70 7402
PARC(SH 7) M23-1
M69 7476 BACK
CL BACK (SH4) 1
ACKF#(SH7)
PARC (SH7)M23-13
SACK
M31 7400
SACKAI
M32 7404
SACKA (SH7) 11
PT9 (SH7)
M40 7474 ACKF
M5 7403
ACK
27
6 BACK (SH7)M69-3
1 PT2I (SH7)
WRITEAI (SH6)M44-2
READA (SH6)M52-6
INTGA (SH6)M52-2
RWRT (SH 6)M44-4
SCMDINHI (SH7)M33-11
WRTCMD
INTCMD
VER
WTC(SH 3)M70-5
VCOAI(SH 5)M48-2
DEVSELA (SH 1) 5
QTBO (SH3) 4
M31 7400
PARA
FUNCØ (SH 1) 5
STEPAI (SH 1) 4
CIO(SH1) 3
M23 7410
FARB
SBACK(SH 7) 1
ACKF (SH7) 13
SRU (SH3) 2
M23 7410
FARC
M23 7410
PAR
60 (14A)
PT2I
CPT02 (34)
M21 7404
FSTSTR (SH3)M38-1
ACKF (SH 7)
M40-1
CIO(SH1) 12
RWGAI
M24 7400
FUNC3(SH1) 13
BUSY (SH2) 3
RWGO
M33 7402
RWGOI
M34 7404
RWS
M33 7402
M42 74160 RW STORAGE LD9
QA QB QC QD EP
CK CLR A B C D
FUNC2I(SH 1)
FUNCQ(SH 1)
FUNC1 (SH 1)
CMDRI (SH6)
H=RWCMD
PT9I
CPT09 (36)
M21 7404
MWPI (SH 7)
M22-2
PT9
M21 7404
T.O. (SH2)M51-1
SECAI (SH6)M44-11
ACKF (SH7)M40-3
SRSI (SH3)M20-2
T.O.(SH2)
M51-16
PT13I
CPT13 (33)
M21 7404
PT13
M22 7400
SPREI (SH6)M61-4
RDIV (SH6)M60-4
ADINCC (SH4)M28-4
SRL (SH3)M9-8
CBS (SH2)M51-6
RSTI(SH1)M41-13
SPRSI (SH6)M60-1
SRU (SH3)M10-8
ADINCA (SH4)M28-2
CIOT (SH1)M15-8
PT18I
CPT18 (35)
M21 7404
PT98
M22 7400
11 SPRI (SH6)
M60-12
PT18
M21 7404
RWGD (SH6)M73-3
SLD (SH3)M3-10
SST (SH3)M29-4
PT9I(SH 7) 2
MWPI
M22 7400
MWP
M22 7400
WTA(SH 3)
M20-1
LSA(SH3)
M33 7402
RWLSI
STOREI(SH1)M24-5
BUSY (SH2)M25-8
WPLI (SH1)M24-2
RWLS
M32 7404
LD BUF (SH 1)
M13-11
TOS (SH2)M71-3
RWCMDI
M32 7404
RWCMDI
M32 7404
73
TIME(SH 2)M72-2
SEARCH (SH6)M26-8
SRCHCMDI
M41 7437
M32 7404
SEARCH (SH6)
M26-9
SRCHCMD
STPSTB
M31 7400
INTR(SH 7)M41-4
DEVSELBI(SH 1)M6-13
STPSTBI
M31 7400
STPSTBI
M30 7414
51
INTCMD (SH7) 11
RWGI (SH6) 12
SCMDINHI
M33 7402

001

ITEM NO	PART/ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

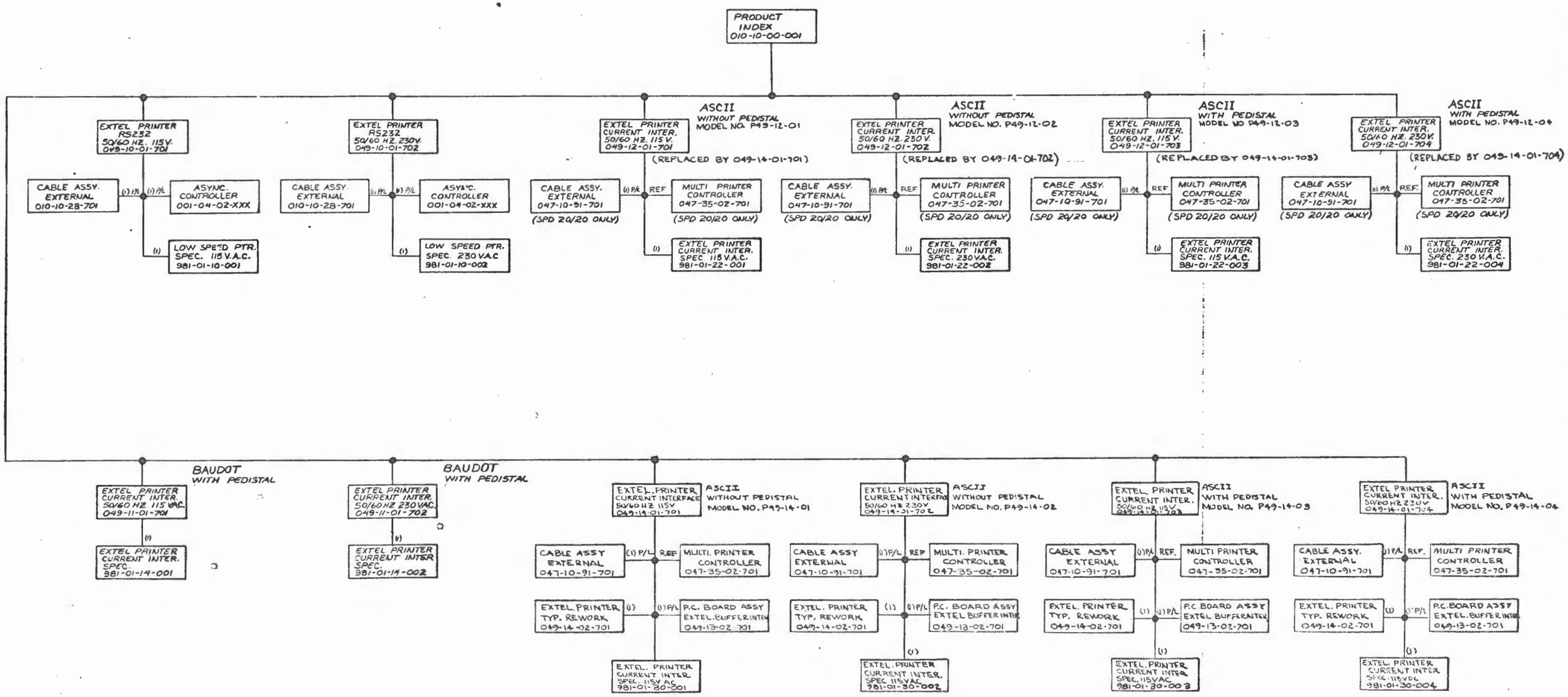
INCOTERM CORPORATION
6 STRATHMORE ROAD
NAT CY MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation with out its written consent and that no right is granted to disclose or use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN DATE
CHECKED DATE
ENGR APPR DATE
APPROVED DATE
FIRST USED ON

SIZE D | DOCUMENT NUMBER 010-56-01 | REV A
SCALE NONE | SHT 7 OF 7

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APPD
C		REVISED & REDRAWN/ECO #3435	[illegible]	[illegible]
D		REV/ECO 3650 12-26-74	[illegible]	



INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in this document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCES ARE
2 PLACE DECIMAL ± .005
3 PLACE DECIMAL ± .010
FRACTIONS ± 1/64
ANGLES ± 1°
SURFACE FINISH 125

DRAWN Lisa Goodrich 12-24
CHECKED 12/26/74
ENGINEER 12/26/74
APPROVED DATE

TITLE: DOCUMENT TREE LOW SPEED PTR. (EXTEL) 001

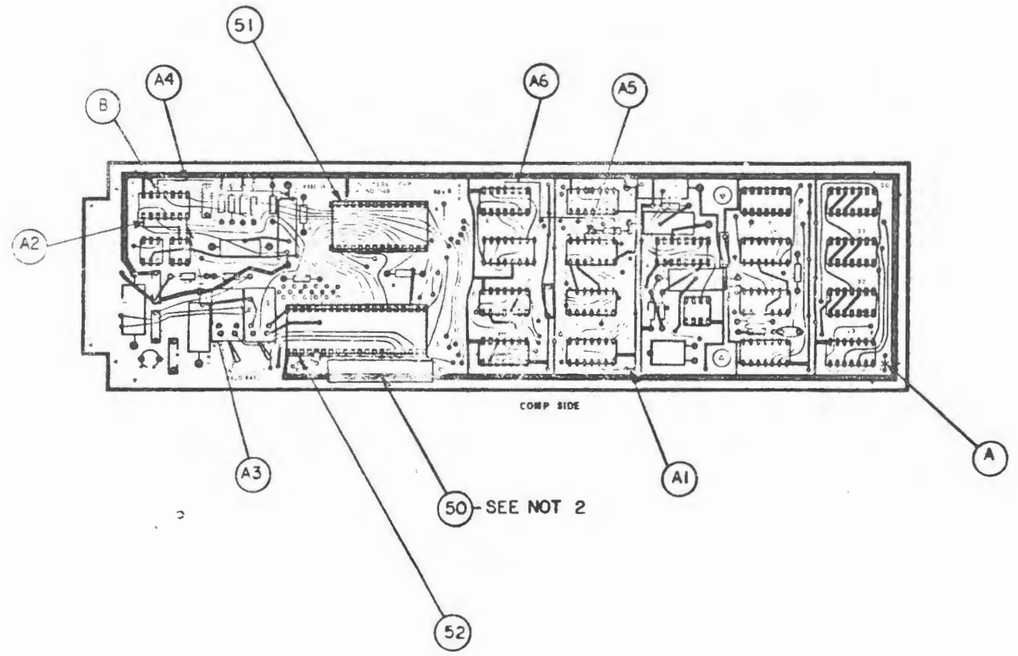
SIZE	DOCUMENT NUMBER	REV
D	049-10-00	D

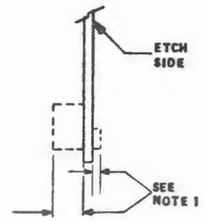
FIRST USED ON 010-10-00-001
SCALE — SHT 1 OF 1

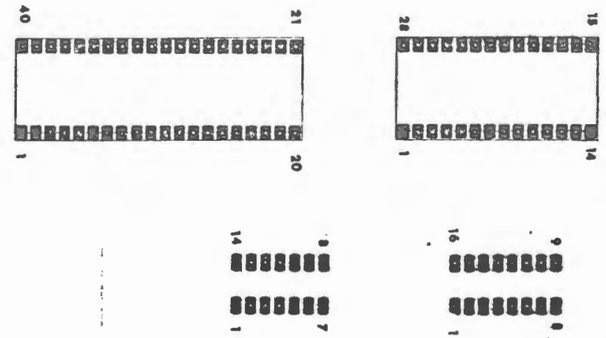
CUT ETCH FROM		ADD JUMPER WIRE (ITEM 53) FROM	
A	EYELET 3 TO EYELET 4	A1	EYELET 1 TO EYELET 2
B	MI-13 TO EYELET	A2	MI-1 TO M3-5
		A3	M3-4 TO MI-7
		A4	ETCH TO MI-12
		A5	MI-10 TO MI-12
		A6	MII-8 TO M6-11

REVISION HISTORY				
REVISION		DESCRIPTION OF CHANGE	CHK	APRD
A		RELEASED 11-2-74 per EVI		
B		REV/ECO 3802 1-8-75		
	B	REV/CHG/ECO 3830		
C		REVISED/ECO 3852 3-3-75		

ITEM NO.	REFERENCE DESIGNATION
52	M51(SOCKET)
51	M41(SOCKET)
50	
49	S1, 2
48	
47	
46	R7
45	R4
44	R5
43	R1, 3, 14
42	R6, 13
41	
40	R8, 9
39	R2
38	R12
37	R11
36	R10
35	
34	C13
33	C3, 4, 5, 7, 9
32	C6
31	C1, 2, 8, 11
30	C10, 12
29	
28	CL1
27	CR2
26	CR4, 5
25	CR1
24	M3
23	M8, 9
22	M2
21	M4
20	M5
19	MI5
18	MI4
17	M20, 21, 22
16	M7
15	M6, 16, 17
14	M23
13	MI3
12	M1
11	MI8
10	MI9
9	MI0, 12
8	MII
7	
6	
5	
4	
3	
2	
1	







PIN NUMBERING
AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL ITEM 50
   AND MARK ASSY NO. 049-13-02-701 AND LATEST ASSY REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 049-13-03-701 REV B

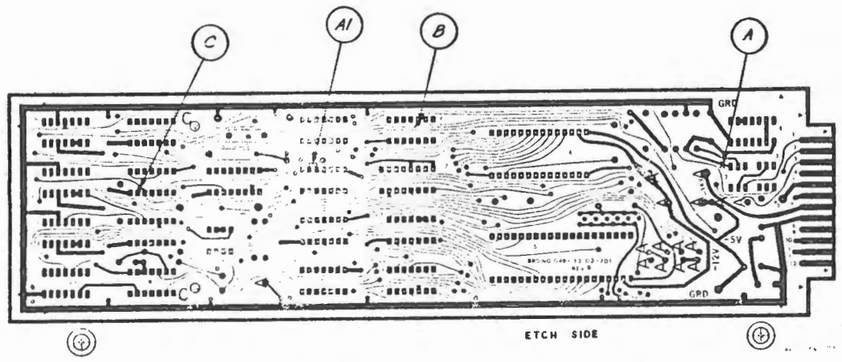
ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES
			701 | 702 | 703 | 704 | 705 | 706 | 707

INCOTERM CORPORATION
5 STRATHMORE ROAD

	P.C. BOARD ASSY EXTEL BUFFERED INTERFACE P.C.-701	
DRAWN BY A. De Guglielmo 11-7-74		
CHECKED Chris Escoto 11/8/74		
APPROVED DATE	D 049-13-02	C
FIRST USED ON	SCALE 1-1 SHT 1 OF 2	

CJT ETCH FROM	ADD JUMPER (ITEM 53) FROM
A M3-4 TO EYELET	A1 M11-9 TO M11-10
B M6-4 TO EYELET	
C M17-5 TO M17-5 AT M17-6	

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD



ETCH SIDE

ITEM NO	PART, ASSY. NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or by use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. FRACTIONAL ±1/32 GENERAL TOLERANCE: .XX ±.01 .XXX ±.005 ANGULAR ±1°

		DATE
DRAWN		
CHECKED		
ENGINEER		
APPROVED		
FIRST USED ON		

PC BOARD ASSY.
EXTEL BUFFERED
INTERFACE 701

SIZE	DOCUMENT NUMBER	REV
D	049-13-02	C

SCALE — SHT 2 OF 2

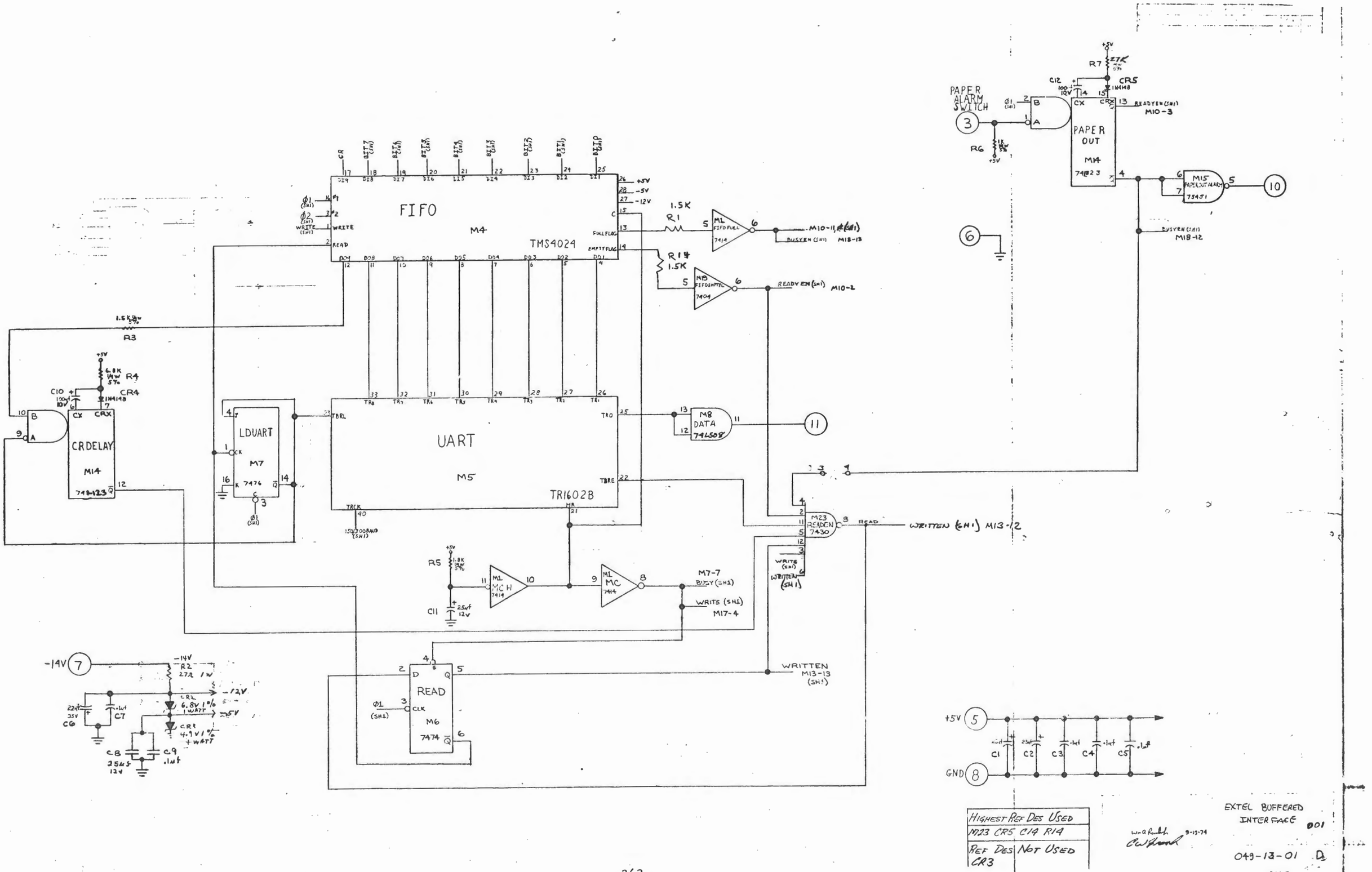
360

REV.	ENG. RELEASE
A	ENG. RELEASE 9-13-74
B	ENG RELEASE 10-31-74 ADD M9,1
C	REV/ECO 3802E 1-8-75
D	REV/ECO 3856 5-5-75

.001mf C15 · R8 470Ω 1/4W 5% · R9 470Ω 1/4W 5% · M18 OSC1 7404 · M18 OSC2 7404 · 10MHz CRYSTAL CL1 · M18 OSC3 7404 · 7493 M22 CNTRA · 7493 M21 CNTRB · 7493 M20 CNTRC · M18 Ø1 7408 · M18 Ø2 7408 · M19 9200 7404 · S1 110/300 BAUD OUTPUT BAUD RATE · TO UART TRCV (SH2) · M17 7474 · S2 9600 / 75 INPUT BAUD RATE · +5V R13 1K 1/4W 5% · +5V R10 3.9K · M3 TIL111 · R11 6.8K 1/4W 5% · R12 200Ω 1/4W 5% · M2 TIL119 · M1 DATAIN 7414 · M1 DATAINH 7414 · DATAINL M11 7400 · M11 DATAINHG 7400 · DATAINEN M6 7474 · UART RECEIVER M5 · TR1602B · +5V · -12V · VSS · VDD · VCC · RRC · ENL · WLS · WLS1 · NB1 · SPD · PE · EPE · SBS · T · G · DRR · RI · RR0 · RR1 · RR2 · RR3 · RR4 · RR5 · RR6 · RR7 · FE · DATA READY · READEN (SH2) M23-6 · (SH2) MC · M13 WRITTEN 7420 · ELEAD 13 · READEN 12 (SH2) · M17 WRITE 7474 · WRDEN (SH2) M23-3 · FIFO (SH2) M4-1 · M1 DRL 7414 · M10 7402 · FIFO FULL (SH2) · M10 7402 · M12 BITEN · M12 CRDEC-A 7402 · M11 CRDEC-D 7400 · M12 CR 7402 · FIFO (SH2) M4-17 · M12 CRDEC-B 7402 · M13 CRDEC-C 7420 · BIT7 M9 · BIT6 M11 · BIT5 M9 · BIT4 M9 · BIT3 M9 · BIT2 M8 · BIT1 M8 · BIT0 M8 · M19 BIT6I 7404 · M4-18 · M4-19 · M4-20 · M4-21 · M4-22 · M4-23 · M4-24 · M4-25 · TO FIFO SH2 · RECVING M16 7474 · M10 BUSYG 7402 · BUSY M7 7476 · MC (SH2) · Ø1 · M18 BUSYEN 7408 · FIFO FULL (SH2) · PAPER OUT (SH2) · M10 READYEN 7402 · FIFO EMPTY L (SH2) · PAPER OUT (SH2) · 1 · 2

EXTEL BUFFERED INTERFACE

W. R. L. 9-19-74 · W. H. Shenk · D 049-13-01 D



Highest Ref Des Used
M23 CR5 C14 R14
Ref Des Not Used
CR3

EXTEL BUFFERED INTERFACE 001

049-13-01 D

SH2

REVISIONS				
REV	DESCRIPTION		CHK	APPD
A	RELEASED/ 8/12/70		DP	
B	UPDATED/ECO 1133	9/23/70	LSH	LSH
C	REVISED/ECO 1609	12/23/71		
D	REVISED/ECO 1757	2/17/72		

INTERNATIONAL COMPUTER TERMINALS CORP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: DECIMALS ± .005 (.13 MM) FRACS ± 1/32 ANGLES ± 2°

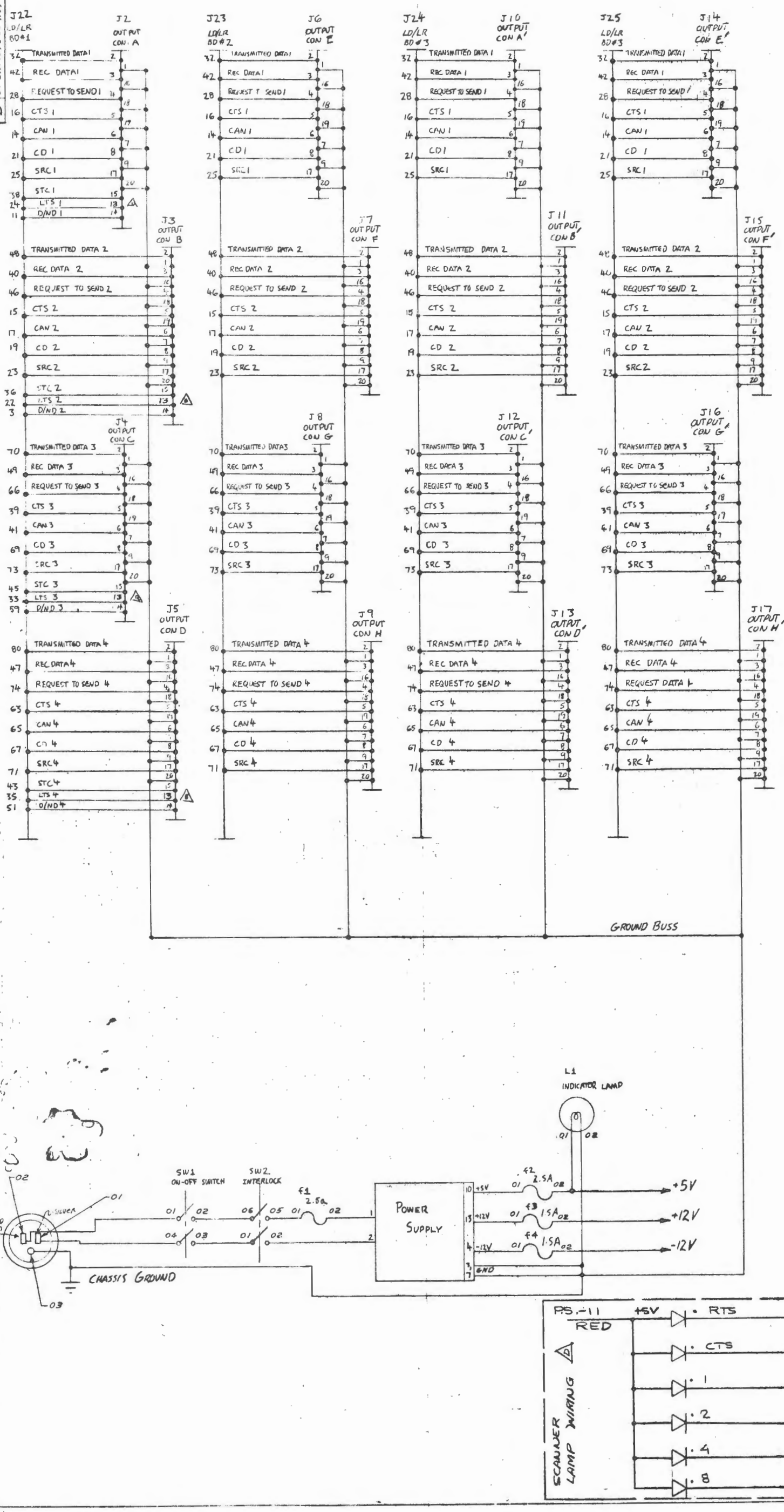
DR | DATE
CHK
ENG
APPD
NEXT ASSY

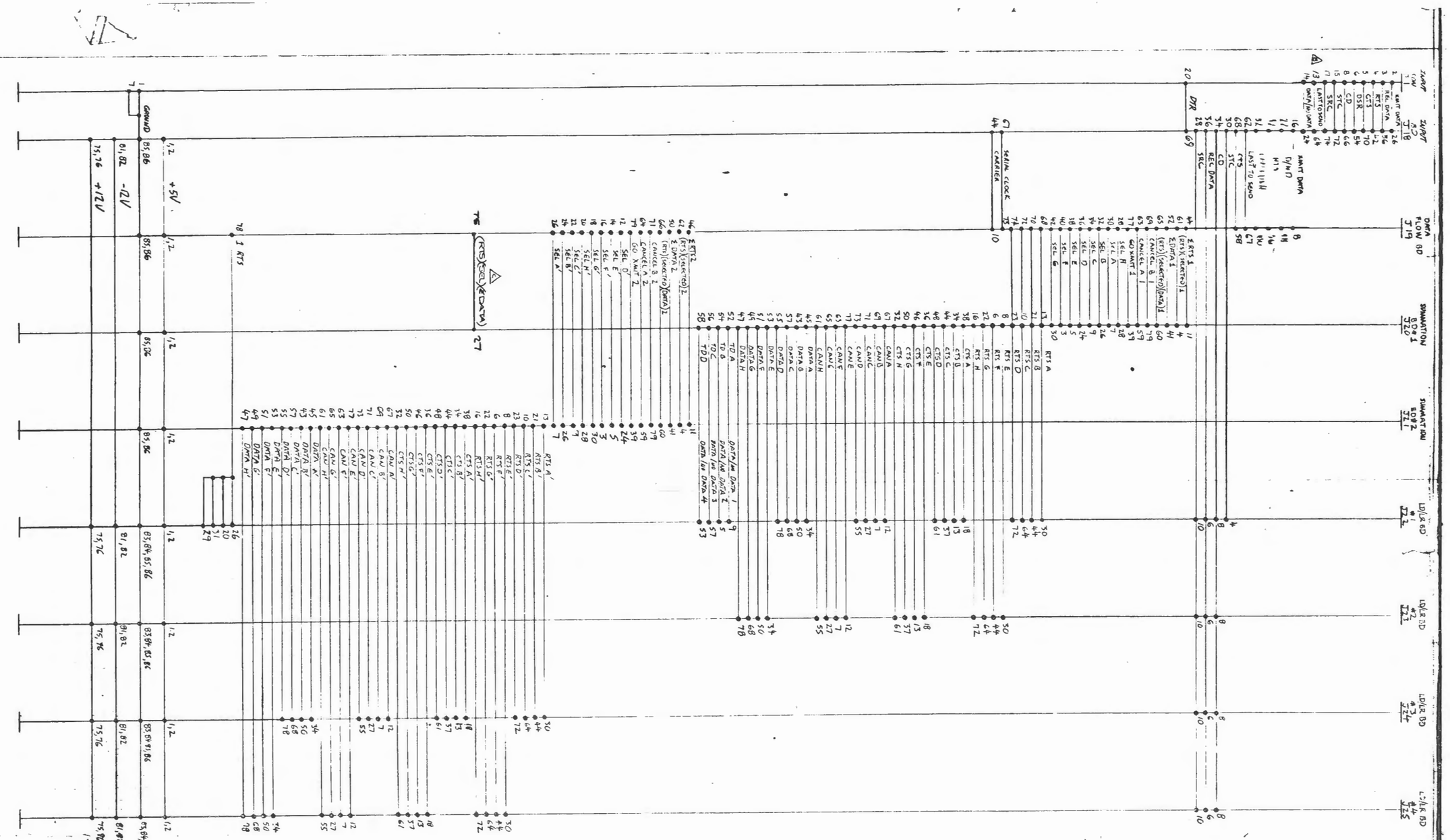
TITLE: MULTIPLEXER WIRING DIAGRAM COI

SIZE: P.C. | S.S. | NO. 007-10-39 | REV D

SCALE | SHT 1 OF 2

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHALL NOT BE DISCLOSED without written authorization from the corporation.





INTERNATIONAL COMPUTER TERMINALS CORP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: DECIMALS ± .005 (3PLCS) ± .02 (2PLCS) ANGLES ± 2°

TITLE: MULTIPLEXER WIRING DIAGRAM 001

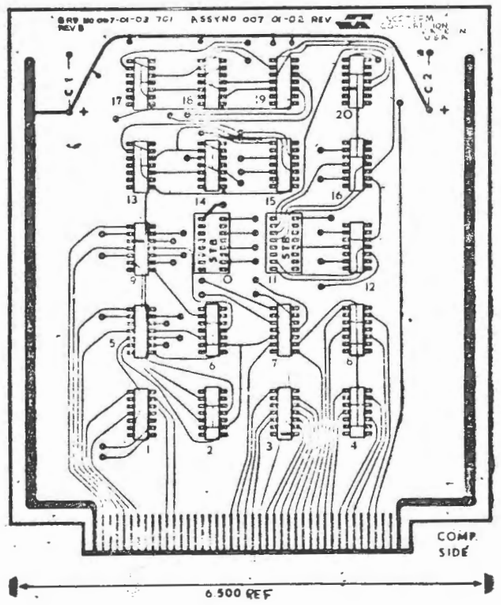
	DATE
DR	
CHK	
ENG	
APPD	
NEXT ASSY	

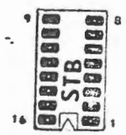
SIZE | P.C. | S.S. | NO. | REV
007-10-39 | D
SCALE | SHT 2 OF 2

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.

REV	DESCRIPTION	CHK	APPD
	RELEASED	K.B	F.B
	ECO 2106		
D	REVISED PER ECO 2106	K.B	

DI ECO 2106 CHANGES THIS DOCUMENT STRUCTURE PER PROCEDURE 300 002 SEE SHEET 1 FOR CONTINUING REVISION HISTORY.





PIN NUMBERING AND ORIENTATION

NOTES.

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX

9	IC 7541	STB 10,11
8	ICSTE 127	C1,C2
7	ICSN 7430N	M1,3
6	ICSN 7410 N	M12,16,20
5	ICSN7405N	M13,17
4	ICSN 7404N	M7,15,19
3	ICSN 7403N	M4,18
2	ICSN7402N	M5,9
1	ICSN7400N	M2,6,8

ITM PART NUMBER DESIGNATION

ASSEMBLE WITH ARTWORK 007-01-03-701 REV. B

INCOTERM CORPORATION
Hamilton Memorial Drive
Mid-Georgia, Massachusetts 01730

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ±0.01
.XXX ±0.005
ANGLES ± 2°

TITLE PC BOARD ASSY MEMORY MULTIPLEXER

SIZE D3 | 007-01-02 | D3

SCALE NONE | SHEET 2 OF 2

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE		
A1	REVISED/REDRAWN/ECO 2471	RJM	RJM

SEL A (7)
RTS A (13)
SEL B (26)
RTS B (21)
SEL C (9)
RTS C (10)
SEL D (24)
RTS D (23)
SEL E (5)
RTS E (8)
SEL F (3)
RTS F (6)
SEL G (30)
RTS G (22)
SEL H (28)
RTS H (16)

M5 7402 — M9 7402 — M1 7430 — ≤RTS (11)

M2 7400 — (38) CTS A
M6 7400 — (34) CTS B
M2 7400 — (44) CTS C
M6 7400 — (48) CTS D
M2 7400 — (36) CTS E
M2 7400 — (46) CTS F
M6 7400 — (50) CTS G
M6 7400 — (32) CTS H

GO XMIT (39) — M7 7404

+5V (1)
+5V (2)
C1 5UF 12V
C2 5UF 12V
STB10
GRD (85)
GRD (86)

MI9 7404 — (SH 2) MI6-9
MI9 7404 — (SH 2) M20-9
MI9 7404 — (SH 2) M20-3
MI9 7404 — (SH 2) MI6-3
MI5 7404 — (SH 2) MI2-3
MI5 7404 — (SH 2) MI2-9
MI9 7404 — (SH 2) MI6-13
MI5 7404 — (SH 2) MI2-13

MI7 7405
MI3 7405

(4) (RTS) (SELECTED)

(SH 2) MI8-1
(SH 2) MI8-12
(SH 2) MI8-4
(SH 2) MI8-9
(SH 2) MI4-5
(SH 2) MI4-1
(SH 2) MI4-12
(SH 2) MI4-9

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This drawing is the property of INCOTERM CORPORATION and is delivered in the express condition that it is not to be disclosed, reproduced, issued in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. It is delivered subject to the right to use information obtained from another source.

DRAWN 5/3/73
CHECKED 5/3/73
ENGINEER
APPROVED 5/3/73
FIRST USED ON 007-01-02-701

TITLE: SUMMATION BOARD (MULTIPLEXER) 001

SIZE	DOCUMENT NUMBER	REV
D	007-01-01	A1

SCALE — SHT 1 OF 2

REVISION	DESCRIPTION OF CHANGE	CHK	APPD
	REVISION HISTORY		

M19-2(SH 1)
M19-6(SH 1)
M19-10(SH 1)
M19-8(SH 1)
M15-6(SH 1)
M15-2(SH 1)
M19-4(SH 1)
M15-4(SH 1)

DATA A (45)
DATA B (43)
TD A (52)
DATA C (57)
TD B (54)
DATA D (55)
TD C (56)
DATA E (53)
TD D (58)
DATA F (51)
DATA G (49)
DATA H (47)

STBII
STBIO

M19 7404
M15 7404
M7 7404
M3 7430 → (41) Σ DATA

M5-10(SH 1)
M5-4(SH 1)
M5-13(SH 1)
M5-1(SH 1)
M9-13(SH 1)
M9-10(SH 1)
M9-4(SH 1)
M9-1(SH 1)

M18 7403
M14 7403
M16 7410
M20 7410
M12 7410
M4 7400
M8 7400
M7 7404

(67) CAN A
(69) CAN B
(71) CAN C
(73) CAN D
(77) CAN E
(63) CAN F
(65) CAN D
(61) CAN E
(59) CANCEL A
(79) CANCEL B
(60) (RTS)(SELECTED)(DATA)

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to do so use or disclose any information contained in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
FRACTIONS ± 1/64
DECIMALS .XX ± .03
.XXX ± .010
ANGLES ± 1°

SUMMATION BOARD (MULTIPLEXER)
001

	DATE
DRAWN	
CHECKED	
APPROVED	
FIRST USED ON	

SIZE	DOCUMENT NUMBER	REV.
D	007-01-01	AJ

SCALE — SHT 2 OF 2

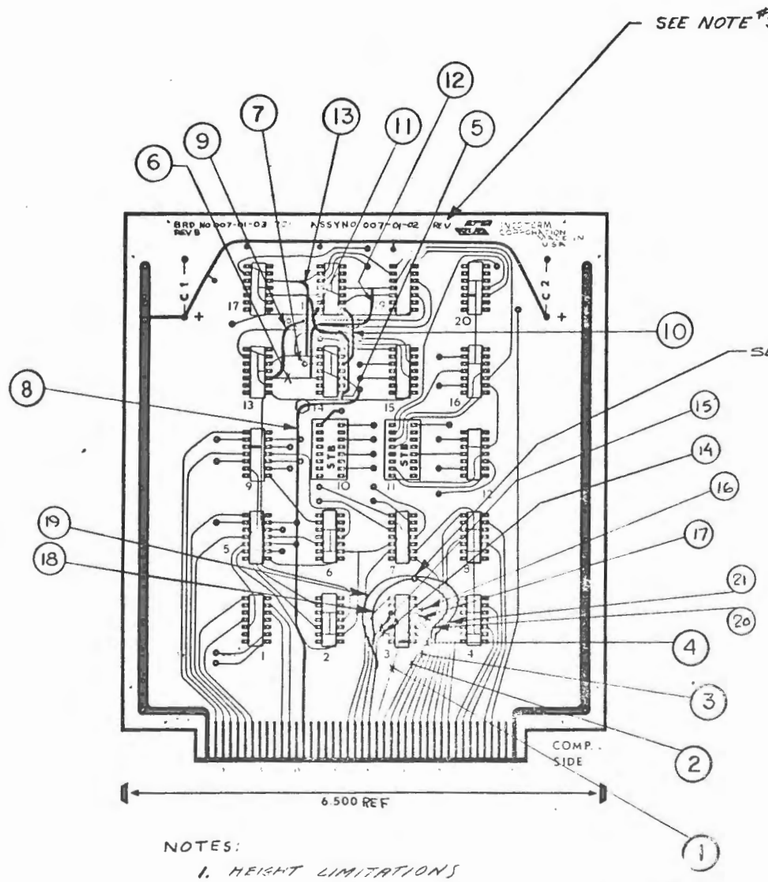
REVISIONS			
REV	DESCRIPTION	CHK	APPD
A	RELEASED		
B	REVISED PER ECO 737 2/13/72		

NO.	CUT ETCH FROM
1	M3-1 TO PIN 47
2	M3-2 TO PIN 49
3	M3-3 TO PIN 51
4	M3-4 TO PIN 53
5	M14-1 TO PC FROM M15-1 TO M13-1
6	M14-12 TO M13-3
7	M14-9 TO JUNCTION

	ADD JUMPER WIRE FROM
8	M14-3 EYELET TO PIN 27
9	M13-3 TO EYELET GOING TO M19-3
10	M18-1 TO M14-5
11	M18-12 TO M14-1
12	M18-4 TO M14-12
13	M18-9 TO M14-9

		CUT ETCH FROM	
B	14	M3-12	TO PIN 45
	15	M3-11	TO PIN 43
	16	M3-6	TO PIN 57
	17	M3-5	TO PIN 55

		ADD JUMPER WIRE FROM		
A	18	PIN 43	THRU HOLE TO	STB11-14
	19	PIN 45	" " "	STB11-13
	20	PIN 55	" " "	STB11-2
	21	PIN 57	" " "	STB11-1



PIN NUMBERING AND ORIENTATION

NOTES:

1. HEIGHT LIMITATIONS
   COMPONENT SIDE OF BOARD .400 MAX
   ETCH SIDE OF BOARD .080 MAX
2. ALL JUMPER WIRES ARE TO BE FASTERN TO BOARD USING ITEM 4, 3 PLACES MARKED (O)
3. MARK AS SHOWN IN 1/8 HIGH VERTICAL GOTHIC CHARACTERS (BLACK) NEW ASSY NO & REV DELETE EXISTING BRD ASSY NUMBER AND REV
4. DRILL HOLE USING NO. 50 DRILL (.070 DIA.) IN AREA SHOWN

INCOTERM CORPORATION — Thomas Blanchard Drive, Marlborough, Massachusetts 01752

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or to use any information data read in said document. This restriction does not limit the right to use information obtained from another source."

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DRN [illegible] DATE 11-10-71
CHK [illegible] 11-10-71
ENG
APPD
NEXT ASSY 007-10-01

TITLE: P.C. BOARD ASSY SUMMATION MULTIPLEXER 702
SIZE P.C. | S.S. | NO. 007-01-02 | REV B
SCALE 1:1 | SHT 1 OF 2

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	DATE
B1	REV'd REDRAWN / ECO 2471	RM	RA

SEL A (7)
RTS A (13)
SEL B (26)
RTS B (21)
SEL C (9)
RTS C (10)
SEL D (24)
RTS D (23)
SEL E (5)
RTS E (8)
SEL F (3)
RTS F (6)
SEL G (30)
RTS G (22)
SEL H (28)
RTS H (16)

M5 7402 — M5 7402 — M5 7402 — M5 7402 — M9 7402 — M9 7402 — M9 7402 — M9 7402

Σ RTS (11)

M1 7430

M2 7400 — (38) CTS A
M6 7400 — (34) CTS B
M2 7400 — (44) CTS C
M6 7400 — (48) CTS D
M2 7400 — (36) CTS E
M2 7400 — (46) CTS F
M6 7400 — (50) CTS G
M6 7400 — (32) CTS H

GO XMIT (39) — M7 7404

+5V (1)
+5V (2)
C1 5UF 12V
C2 5UF 12V
STBIO 16 / 9
GRD (85)
GRD (86)

M19 7404 — (SH 2) M16-9
M19 7404 — (SH 2) M20-9
M19 7404 — (SH 2) M20-3
M19 7404 — (SH 2) M16-3
M15 7404 — (SH 2) M12-3
M15 7404 — (SH 2) M12-9
M19 7404 — (SH 2) M16-13
M15 7404 — (SH 2) M12-13

M17 7405 — M17 7405 — M17 7405 — M17 7405 — M13 7405 — M13 7405 — M13 7405 — M13 7405

4 (RTS) (SELECTED)

(SH 2) M14-5
(SH 2) M14-1
(SH 2) M14-12
(SH 2) M14-9

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION — 5 STRATHMORE ROAD — NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and, that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source

DRAWN — 5/3/79
CHECKED — 5/31/79
ENGINEER —
APPROVED —

SUMMATION BOARD (MULTIPLEXER) 002

SIZE D | DOCUMENT NUMBER 007-01-01 | REV B1

FIRST USED ON 007-01-02-702 | SHT 1 OF 2

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

M19-2 (SH 1)
M19-6 (SH 1)
M19-10(SH 1)
M19-8 (SH 1)
M15-6 (SH 1)
M15-2 (SH 1)
M19-4 (SH 1)
M15-4 (SH 1)

STB11
STB10

TD A (52)
DATA A (45)
TD B (54)
DATA B (43)
TD C (56)
DATA C (57)
TD D (58)
DATA D (58)

Σ(ΣDATA) (41)

M3 7430
M15 7404
M7 7404
M18 7403
M14 7403
M16 7410
M12 7410
M20 7410
M4 7400
M8 7400
M7 7404

67 CAN A
69 CAN B
71 CAN C
73 CAN D
77 CAN E
63 CAN F
65 CAN D
61 CAN E
59 CANCEL A
79 CANCEL B
60 $\overline{(RTS)(SELECTED)(DATA)}$
27 $\overline{(RTS)(SELECTED)(\Sigma DATA)}$

M5 – 10 (SH 1)
M5 – 4 (SH 1)
M5 – 13 (SH 1)
M5 – 1 (SH 1)

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation, without its written consent and that no right is granted to disclose or so use any information obtained in said document. This restriction does not limit the right to use information obtained from another source."

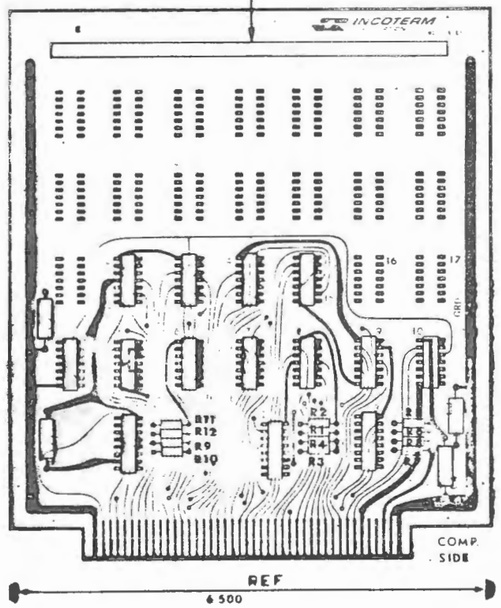
DRAWN	DATE	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

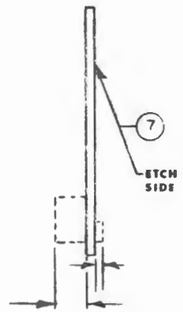
SUMMATION BOARD (MULTIPLEXER)
002

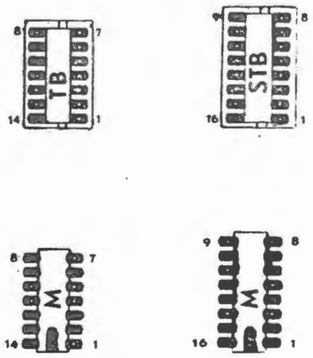
SIZE	DOCUMENT NUMBER	REV
D	007-01-01	B1

SCALE — SHT 2 OF 2

REVISION HISTORY			
REVISION	DESCRIPTION	DATE	CHK







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
15	M5-10, 12-15
14	M1,2,3
13	
12	R1-R12
11	
10	
9	
8	
7	
6	
5	C3,C4
4	C1,C2
3	
2	
1	M4

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 16, AND MARK ASSY. NO. 007-03-02-701E AND LATEST ASSY REVISION.

ASSY. WITH ARTWORK 007-03-03-701 REV E MASTER 701E

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

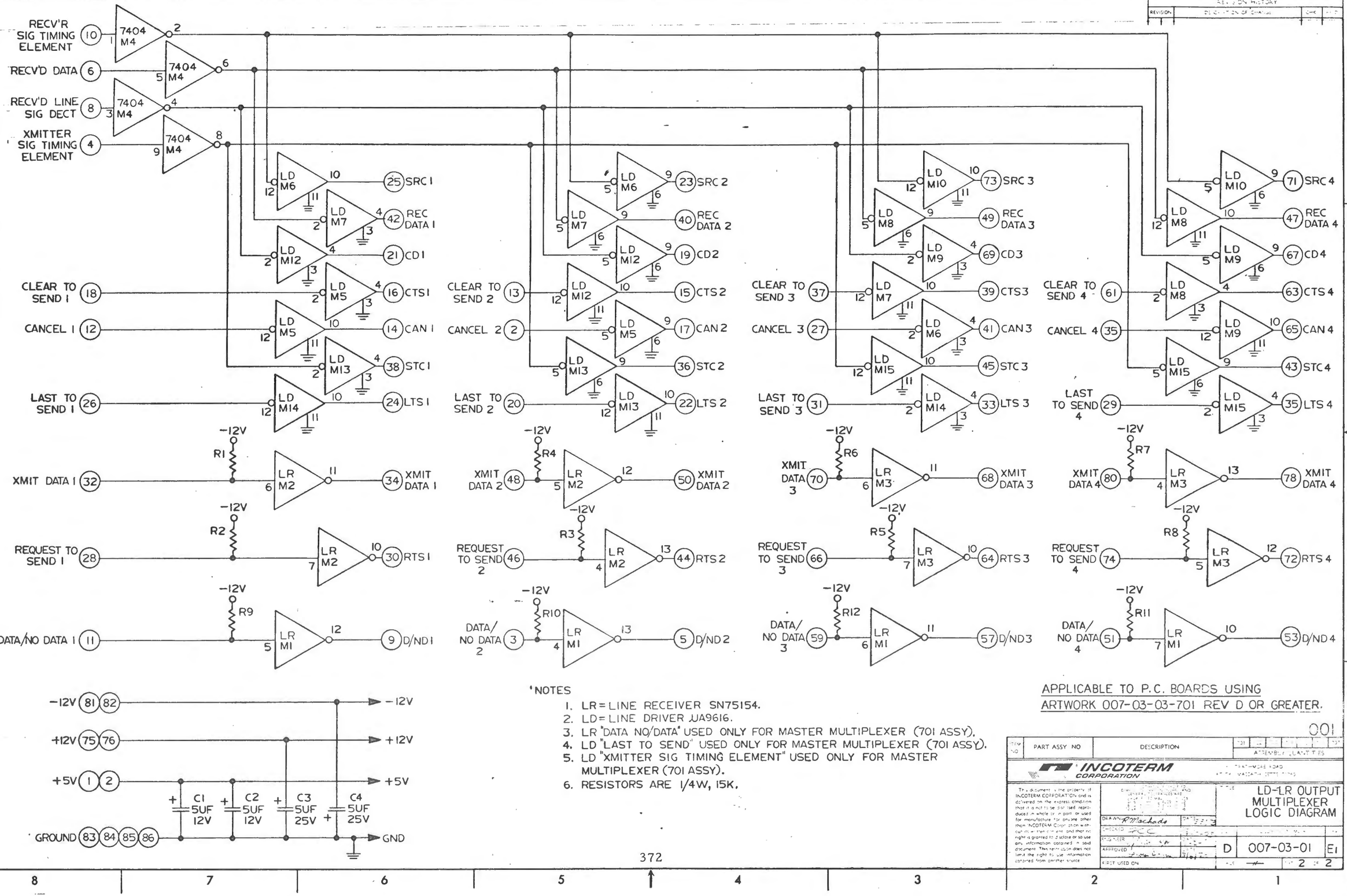
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2

DR		DATE
CHK	R BILODEAU	8/25/78
ENG	R BILODEAU	8/25/78
APPD	F LONDRES	8/28/78
NEXT ASSY	007-10-01	

P.C. BOARD ASSY
LINE DRIVER/RECEIVER
OUTPUT MULTIPLEXER

D | 007-03-02 | G2

SCALE 1:1 SHT 6 OF 6



*NOTES

1. LR = LINE RECEIVER SN75154.
2. LD = LINE DRIVER UA9616.
3. LR "DATA NO/DATA" USED ONLY FOR MASTER MULTIPLEXER (701 ASSY).
4. LD "LAST TO SEND" USED ONLY FOR MASTER MULTIPLEXER (701 ASSY).
5. LD "XMITTER SIG TIMING ELEMENT" USED ONLY FOR MASTER MULTIPLEXER (701 ASSY).
6. RESISTORS ARE 1/4W, 15K.

APPLICABLE TO P.C. BOARDS USING ARTWORK 007-03-03-701 REV D OR GREATER.

001

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN R Machado

CHECKED

ENGINEER

APPROVED

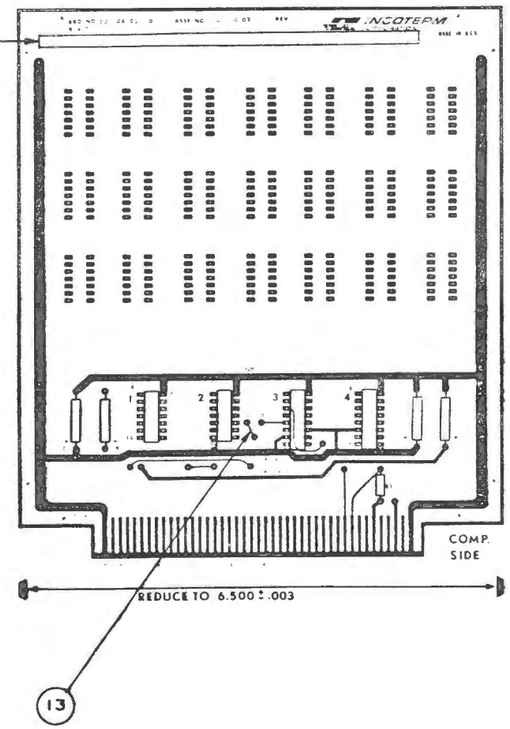
NEXT USED ON

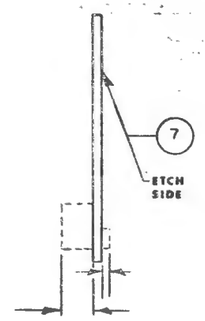
TITLE: LD-LR OUTPUT MULTIPLEXER LOGIC DIAGRAM

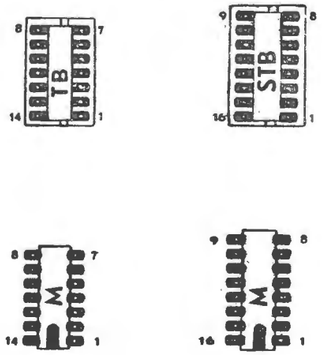
D | 007-03-01 | E1

SHEET 2 OF 2

REVISION HISTORY				
REVISION		DESCRIPTION	DATE	CHK







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
25	
24	
23	
22	
21	
20	
19	
18	
17	
16	
15	M1
14	M3, 4
13	
12	R1
11	
10	
9	
8	
7	
6	
5	C3, C4
4	C1, C2
3	
2	
1	M2

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 16, AND MARK ASSY. NO. 007-04-02-701C AND LATEST ASSY. REVISION.

ASSY WITH ARTWORK 007-04-03-701 REV C

7010

INCOTERM CORPORATION
Wayne Memorial Drive
Westborough, Massachusetts 01752

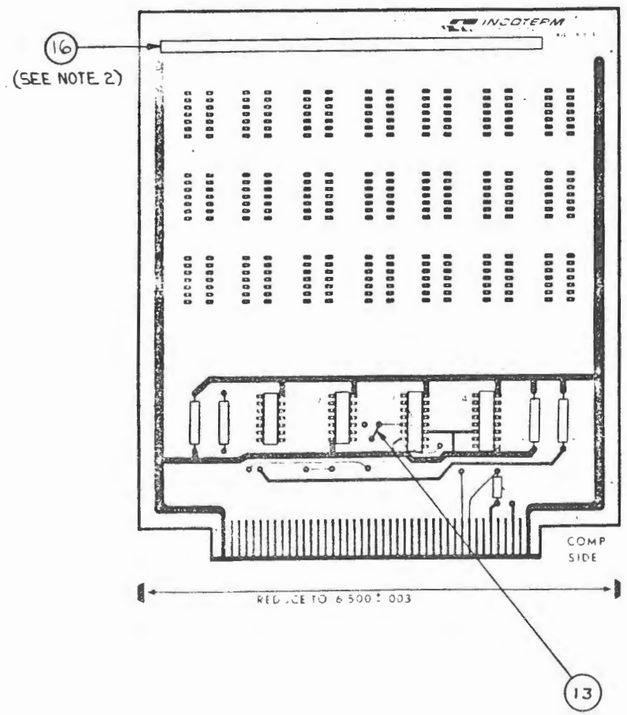
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (.13PLCS) .02 (.12PLCS)
ANGLES 2°

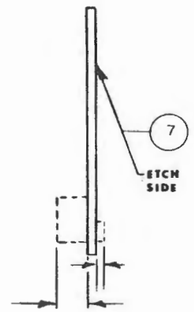
DR
CHK
ENG
APPD
NEXT ASSY

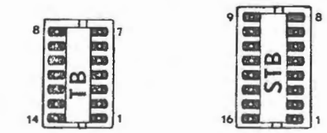
SIZE D | P.C. | S.S. | NO. 007-04-02 | REV 03
SCALE 1:1 | SHT 3 OF 3

TITLE
P.C. BOARD ASSY
LINE DRIVER/RECEIVER
INPUT MULTIPLEXER

REVISION HISTORY			
REVISION	DESCRIPTION	DATE	CHK







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION
15	M1
14	M3, 4
13	
12	R1
11	
10	
9	
8	
7	
6	
5	C3, C4
4	C1, C2
3	
2	
1	M2

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABEL, ITEM 16, AND MARK ASSY. NO. 007-04-02-703C AND LATEST ASSY. REVISION.

ASSY WITH ARTWORK 007-04-03-701 REV C. 703C

INCOTERM CORPORATION
Hayden Memorial Dr.
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (2PLCS) .02 (2PLCS)
ANGLES 2

DR [signature] DATE 7-7-78
CHK
ENG
APPD
NEXT ASSY 007-10-01-

TITLE
P.C. BOARD ASSY
LINE DRIVER/RECEIVER
INPUT MULTIPLEXER

SIZE	FSCM NO	DWG NO	REV
D		007-04-02	C3

SCALE 1:1 SHT 4 OF 4

APPLICABLE TO P.C. BOARDS USING ART WORKS 007-04-03-701 REV A&B

CLEAR TO SEND (70) → LR M4 → (68) CTS

RECEIVED DATA (56) → LR M6 → M5 7404 → JUMPER WIRE (SEE NOTE 4) → (36) REC DATA

RECEIVED LINE SIGNAL DETECTOR (66) → LR M6 → M5 7404 → (44) CARRIER, (34) CD

CANCEL & DATA SET READY (54) → LR M3 → (52) CAN & DSR

TRANSMITTER SIG TIMING ELEMENT (72) → LR M7 → M5 7404 → (67) SERIAL CLOCK, (30) STC

RECEIVER SIGNAL TIMING ELEMENT (74) → LR M7 → M5 7404 → (28) SRC

LAST MUX TO SEND* (64) → LR M3 → (62) LAST TO SEND

REQUEST TO SEND (42) → LD M2 → (32) RTS

TRANSMITTED DATA (26) → LD M1 → (16) XMIT DATA

DATA/ NO DATA* (NEW SYNC) (24) → LD M1 → (22) D/ND* (NEW SYNC)

NOTES:
A. LR-LINE RECEIVER CERMETEK CMI160
B. LD-LINE DRIVER CERMETEK CMI150
C. *-LINES USED ONLY WHEN MUX IS TIED TO MASTERMUX

+5V

CLEAR TO SEND (70) → LR M4 → (68) CTS

RECEIVED DATA (56) → LR M3 → M2 7404 → (SEE NOTE 4) JUMPER WIRE → (36) REC DATA

RECEIVED LINE SIGNAL DETECTOR (66) → LR M3 → M2 7404 → (44) CARRIER, (34) CD

CANCEL & DATA SET READY (54) → LR M3 → (52) CAN & DSR

TRANSMITTER SIG TIMING ELEMENT (72) → LR M4 → M2 7404 → (67) SERIAL CLOCK, (30) STC

RECEIVER SIGNAL TIMING ELEMENT (74) → LR M4 → M2 7404 → (28) SRC

LAST MUX TO SEND* (64) → LR M3 → (62) LAST TO SEND

REQUEST TO SEND (42) → LD M1 → (32) RTS

TRANSMITTED DATA (26) → LD M1 → (16) XMIT DATA

DATA NO DATA* (NEW SYNC) (24) → LD M1 → (22) D/ND* (NEW SYNC)

+12V → R1 3.3K 1/4W → DATA TERMINAL READY (69) (DTR)

−12V (81)(82) → −12V

+12V (75)(76) → +12V

+5V (1)(2) → +5V

C1 5UF 12V, C2 5UF 12V, C3 5UF 25V, C4 5UF 25V

GRD (85)(86) → GRD

NOTES:
1. LR — LINE RECEIVER SN75154
2. LD — LINE DRIVER µA9616
3. * — LINES USED ONLY WHEN MUX IS TIED TO MASTERMUX
4. JUMPER WIRE
   001 NORMAL DATA POLARITY PADS 1&2
   002 — INVERTED DATA POLARITY PADS 1&3

REVISION	DESCRIPTION OF CHANGE	CHK	APPD
C	REVISED PER DRN ECO 2471		

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — 5 STRATHMORE ROAD, NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corp. It is with out its written permission and the right is granted to it at all times only with proper credit lines in such document. This notice is not to be construed as an admission or evidence of publication under the United States Copyright Act.

DRAWN Charlotte 5-10-75
CHECKED Z Page 5/5/75
ENGINEER
APPROVED

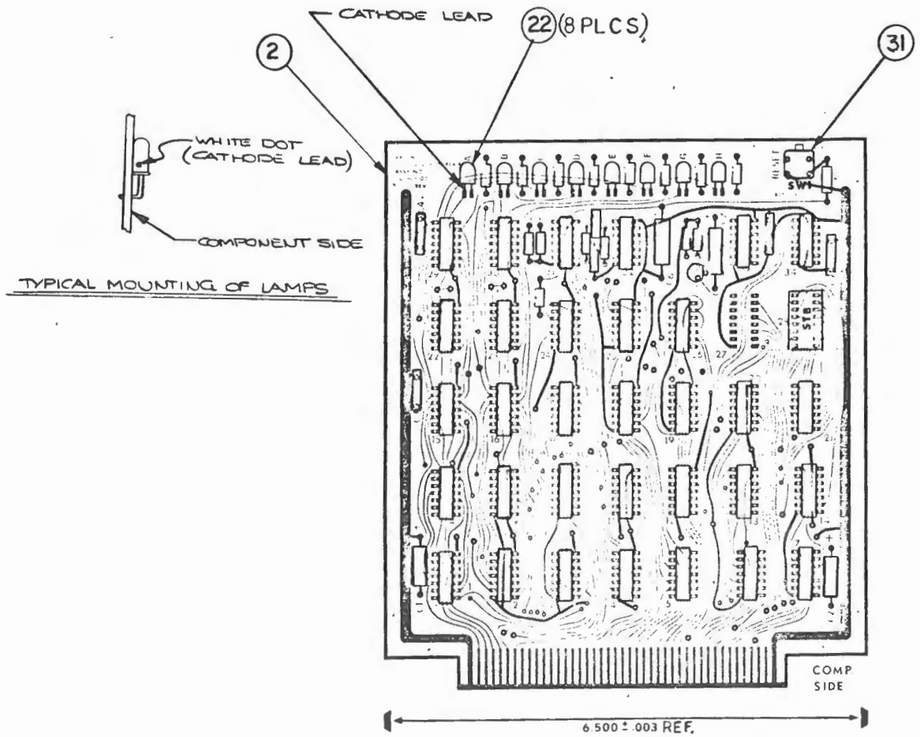
LINE DRIVER/RECV INPUT BOARD (MULTIPLEXER) 001/002

D 007-04-01 C1

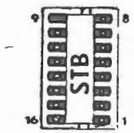
NEXT ASSY USED ON 007-04-02-[illegible] | QUALITY: NONE | SHT 1 OF 1

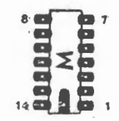
375

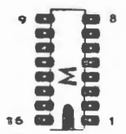
REVISION HISTORY				
REVISION		DESCRIPTION (P)5453	DATE	CHK
A		RELEASED	5-3-72	
	A1	REVISED, ECO 1909 5/30/72		
B		REVISED, ECO 1933 7/24/72		
	B1	REV. CHANGE ONLY/ECO 2477		



TYPICAL MOUNTING OF LAMPS







PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ITEM NO.	REFERENCE DESIGNATION	
13	R7	3
31	SW1	
28	ET3 28	4
27	C6 C7	4
26	C5	
25	C3, C4, C8, C9	
24	C1, C2	
22	A-11	
21	Q1	
20	CR1	
18	R6	
17	R16	
16	R5	
15	R1-R4	
14	R9-R15	3
11	M33	
10	M22, 23, 29, 30, 32	
9	M10, 21	
8	M13, 14, 20	
7	M24, 31	
6	M5, 11, 12, 17, 34	
5	M25, 26	
4	M1, 2	
3	M3, 4, 6, 7, 8, 9, 15, 16, 18, 19	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

This document is the property of INCOTERM Corporation and is loaned in confidence. It is not to be duplicated, used or disclosed in any manner or part for manufacture for anyone other than INCOTERM Corporation without the written permission of INCOTERM Corporation. The information contained herein is not to be disclosed outside your organization nor used in any way detrimental to the interests of INCOTERM Corporation.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DRN [illegible] DATE 5-3-72
CHK [illegible]
ENG [illegible] 5-2-72
APPD [illegible]
NEXT ASSY [illegible] 5-10-72

P.C. BOARD ASSY
SUMMATION BRD
RTS TIMER ASSY
MUX 701

SIZE D | FSCM NO. 007-05-02 | REV B1
SCALE 1:1 | SHT 1 OF 1

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
A	REVISED & REDRAWN/ECO 2548	[illegible]	[illegible]

GAA M15-1 (SH 3)
SEL A (7)
RTSA' M8-3 (SH 3)
GAB M16-13 (SH 3)
SEL B (26)
RTSB' M9-11 (SH 3)
GAC M15-4 (SH 3)
SEL C (9)
RTSC' M8-6 (SH 3)
GAD M16-10 (SH 3)
SEL D (24)
RTSD' M9-8 (SH 3)
GAE M15-13 (SH 4)
SEL E (5)
RTSE' M8-11 (SH 4)
GAF M15-10 (SH 4)
SEL F (3)
RTSF' M8-8 (SH 4)
GAG M16-4 (SH 4)
SEL G (30)
RTSG' M9-6 (SH 4)
GAH M16-1 (SH 4)
SEL H (28)
RTSH' M9-3 (SH 4)

SERT A — M1 7402
SERT B — M2 7402
SERT C — M1 7402
SERT D — M2 7402
SERT E — M1 7402
SERT F — M1 7402
SERT G — M2 7402
SERT H — M2 7402

M10 7430

GO XMIT (39) — M11 7404

SERTD A M25-9 (SH 2) — M3 7400 — (38) CTS A
SERTD B M25-12 (SH 2) — M3 7400 — (34) CTS B
SERTD C M26-1 (SH 2) — M4 7400 — (44) CTS C
SERTD D M26-5 (SH 2) — M4 7400 — (48) CTS D
SERTD E M26-9 (SH 2) — M3 7400 — (36) CTS E
SERTD F M26-12 (SH 2) — M4 7400 — (46) CTS F
SERTD G M25-2 (SH 2) — M4 7400 — (50) CTS G
SERTD H M25-5 (SH 2) — M3 7400 — (32) CTS H

(11) SRTS'

M24 7405 — (RTS' SELECTED) (4) RTSOS M33-2 (SH 4)

SERT A — M34 7404 — SERTC A M20-10 (SH 2)
SERT B — M34 7404 — SERTC B M20-1 (SH 2)
SERT C — M12 7404 — SERTC C M14-13 (SH 2)
SERT D — M12 7404 — SERTC D M14-10 (SH 2)
SERT E — M12 7404 — SERTC E M14-4 (SH 2)
SERT F — M11 7404 — SERTC F M13-13 (SH 2)
SERT G — M11 7404 — SERTC G M13-3 (SH 2)
SERT H — M11 7404 — SERTC H M13-11 (SH 2)

M24 7405 — RTSEL

M31 7405

+5V (1)
+5V (2)
C1 47UF 10V
C2 47UF 10V
C3 .1UF 10V
C4 .1UF 10V
C8 .1UF 10V
C9 .1UF 10V
+5V
GND (85)
GND (86)
GND

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL RESISTOR VALUES ARE IN OHMS, ±5% AND ARE 1/4 WATT.
2. A & B ARE ETCH CUT OPTIONS.

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

INCOTERM CORPORATION — [illegible] BEARMORE ROAD, [illegible] MASSACHUSETTS [illegible]

SUMMATION BRD.
RTS TIMER (MUX)
LOGIC DIAGRAM 001

DRAWN [illegible] DATE
CHECKED JCC DATE
APPROVED [illegible] DATE 1/74
NEXT USED ON

D 007-C5-01 A1
SCALE [illegible] SHT 1 OF 4

377

SERT A M34-10 (SH 1)
SERT B M34-8 (SH 1)
SERT C M12-12 (SH 1)
SERT D M12-10 (SH 1)
SERT E M12-8 (SH 1)
SERT F M11-10 (SH 1)
SERT G M11-12 (SH 1)
SERT H M11-8 (SH 1)

STB28

DATA A (45) — M5 7404
DATA B (43) — M5 7404
DATA C (57) — M12 7404
DATA D (55) — M12 7404
DATA E (53) — M5 7404
DATA F (51) — M5 7404
DATA G (49) — M5 7404
DATA H (47) — M5 7404

INHA * (SH 3) — M18 7400 → INDA
INHB * (SH 3) — M18 7400 → INDB
INHC * (SH 3) — M19 7400 → INDC
INHD * (SH 3) — M19 7400 → INDD
INHE * (SH 4) — M19 7400 → INDE
INHF * (SH 4) — M19 7400 → INDF
INHG * (SH 4) — M18 7400 → INDG
INHH * (SH 4) — M18 7400 → INDH

SERT A M1-4 (SH 1) — M25 7403 — SERTD A
SERT B M2-10 (SH 1) — M25 7403 — SERTD B
SERT C M1-1 (SH 1) — M26 7403 — SERTD C
SERT D M2-13 (SH 1) — M26 7403 — SERTD D
SERT E M1-10 (SH 1) — M26 7403 — SERTD E
SERT F M1-13 (SH 1) — M26 7403 — SERTD F
SERT G M2-1 (SH 1) — M25 7403 — SERTD G
SERT H M2-4 (SH 1) — M25 7403 — SERTD H

SERTD A … SERTD H → M21 7430 → (41) ΣDATA

SERTC A — M20 7410 → M6 7400 → (67) CAN A
SERTC B — M20 7410 → M7 7400 → (69) CAN B
SERTC C — M14 7410 → M7 7400 → (71) CAN C
SERTC D — M14 7410 → M7 7400 → (73) CAN D
SERTC E — M14 7410 → M7 7400 → (77) CAN E
SERTC F — M13 7410 → M6 7400 → (63) CAN F
SERTC G — M13 7410 → M6 7400 → (65) CAN G
SERTC H — M13 7410 → M6 7400 → (61) CAN H

SERTC A … SERTC H → M20 7410 → M12 7404 → (59) CANCEL A
M20 7410 → (79) CANCEL B

(60) (RTS')(SELECTED)(DATA)

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APP.

ITEM NO	PART ASSY NO	DESCRIPTION	101	102	103	104	105
			ASMBLY QUANTITY				

INCOTERM CORPORATION

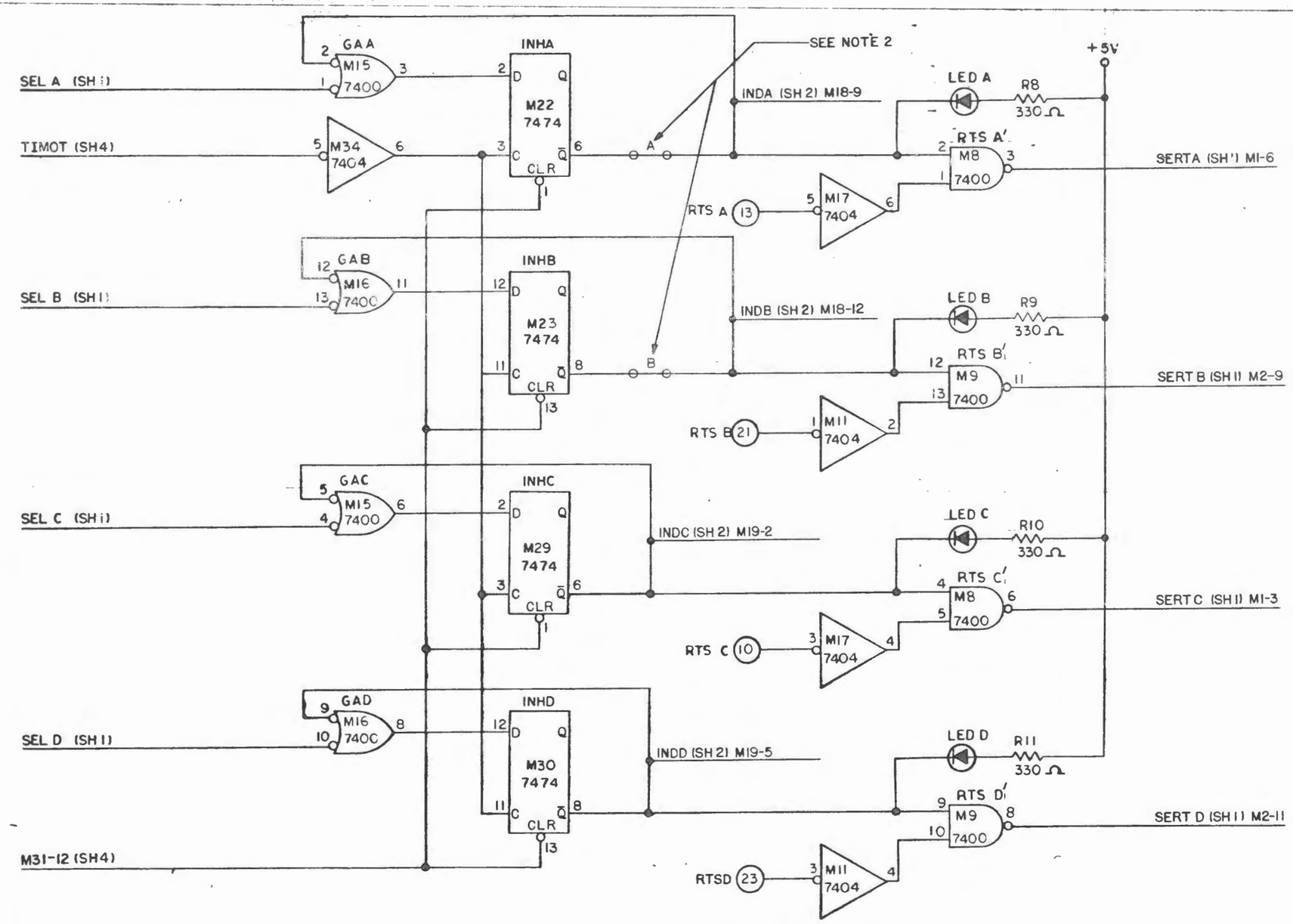
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM CORPORATION without its written consent, and that no right is granted to disclose or to use any information contained in said document. This restriction does not limit the right to use information obtained from any other source."

DRAWN	J. Storey	DATE 6-15-73
CHECKED		DATE
ENGINEER		DATE
APPROVED		DATE
FIRST USED ON		

SUMMATION BRD. RTS TIMER (MUX) LOGIC DIAGRAM 001

SIZE D | DOCUMENT NUMBER 007-05-01 | REV AI

SCALE — | SHT 2 OF 4



REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
5 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM C rporation without its written c nsent and that no ri ht is ranted to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN: Fernandes DATE
CHECKED: JCC DATE
APPROVED DATE
FIRST USED ON

SUMMATION BRD.
RTS TIMER (MUX)
LOGIC DIAGRAM 001

SIZE D | DOCUMENT NUMBER 007-05-01 | REV A1

SCALE — | SHT 3 OF 4

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

+5V
R7 330K
R6 10K
Q1 2N5088
C7 + 100 UF 10V
RTSEL(SH1)
RTSOS M33 9601
TIMOT
M32 7474
M34-5(SH3)
RTSEL *
M31 7405
R4 1K
+5V
C5 .001 UF

SELE (SH1)
GAE M15 7400
INHE M22 7474
INDE(SH2)M19-9
LED E
R12 330Ω
RTS E'
M8 7400
SERTE M1-9 (SH1)
RTS E (8)
M17 7404

SELF (SH1)
GAF M15 7400
INHF M29 7474
INDF (SH2) M19-12
LED F
R13 330Ω
RTS F'
M8 7400
SERTF M1-11 (SH1)
RTS F (6)
M17 7404

SELG (SH1)
GAG M16 7400
INHG M30 7474
INDG(SH2)M18-1
LEDG
R14 330Ω
RTS G'
M9 7400
SERTG M2-3 (SH1)
RTS G (22)
M17 7404

SELH (SH1)
GAH M16 7400
INHH M23 7474
INDH(SH2)M18-5
LED H
R15 330Ω
RTS H'
M9 7400
SERTH M2-6 (SH1)
RTS H (16)
M17 7404

+5VO
R1 1K
INHD(M30-13)(SH3)
M31 7405
R3 1K
+5V
R5 4.7K
CR1 IN4148
C6 100UF 10V
R16 47Ω 1/2W, 5%
NO
NC
C SW1
M31 7405
M31 7405
R2 1K
+5V

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES

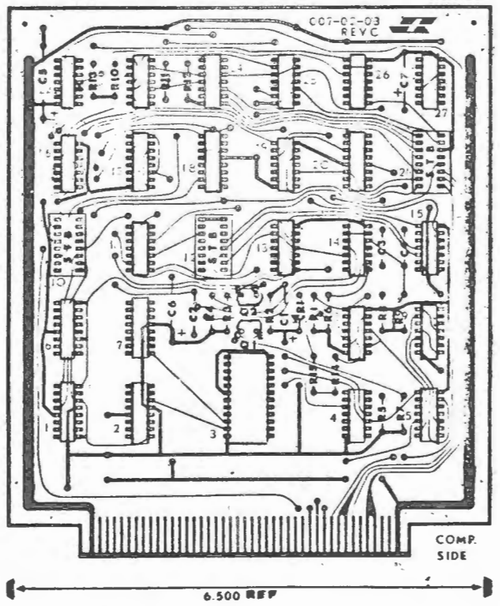
INCOTERM CORPORATION
TRAITMORE ROAD
MASSACHUSETTS

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use or to use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

DRAWN Bonsanto DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE
FIRST USED ON

TITLE: SUMMATION BRD. RTS TIMER (MUX) LOGIC DIAGRAM 001
SIZE D
DOCUMENT NUMBER 007-05-01
REV A1
SCALE
SHT 4 OF 4

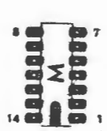
REVISIONS			
REV	DESCRIPTION	CHK	APPD
G	ECO # 1288		
H	REVISED PER ECO 1656 11/1/,		
J	RE: CHANGE [illegible]		
J1	ECO 2105 CHANGES THIS DOCUMENT STRUCTURE PER PROCEDURE 300-02. SEE SHEET 1 FOR CONTINUING REVISION ASSIGNMENT HISTORY.		

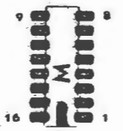


ITEM NO.	REFERENCE DESIGNATION
24	CR1
23	STB 10,12,21
22	Q2
21	Q1
20	C1
19	C2
18	C5
17	C3,C4
16	C6,C7
15	R2
14	R3
13	R12
12	R8,9
11	R1,[illegible]
10	M3
9	M1,2,6,7,17,18,20
8	M27
7	M26
6	M19,24
5	M8
4	M4,11,14
3	M23
2	M9,15,16
1	M5,13,25,22

NOTE:

1. HEIGHT LIMITATIONS.
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.





PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 007-02-03-701 REV C

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS .XX (2PLCS) .XXX (3PLCS)
ANGLES 2°

TITLE: P.C. BOARD ASSY LOGIC DATA FLOW MULTIPLEXER 701

D 007-02-02 J3

NEXT ASSY 007-10-01

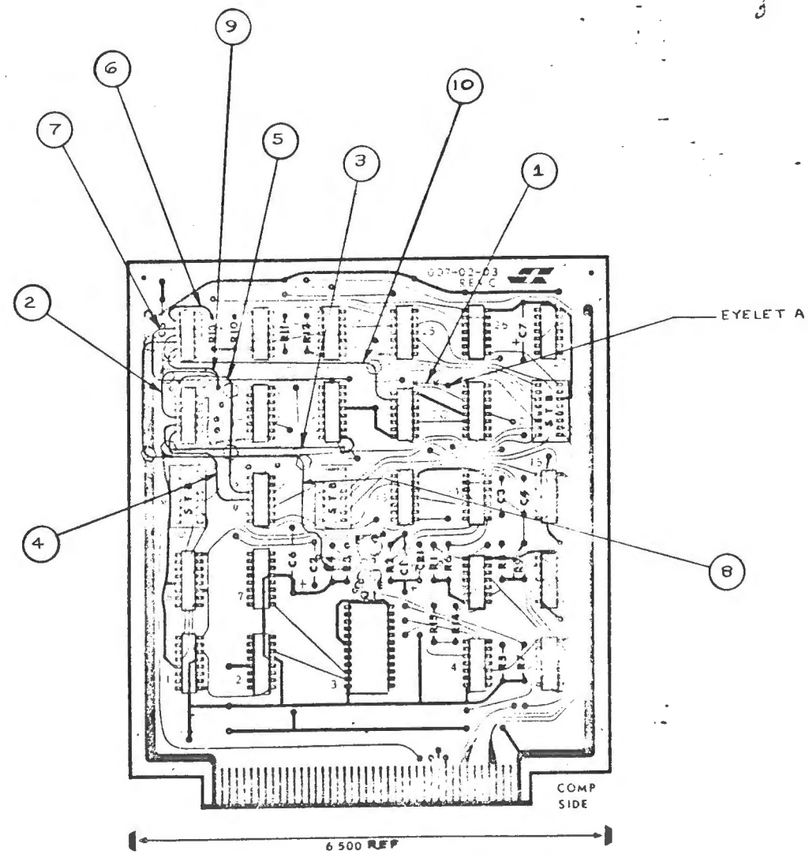
REVISIONS				
REV	DESCRIPTION		CHK	APPD
A	RELEASED	3/31/71	[illegible]	[illegible]

CUT ETCH

1	M19 PIN 9 TO EYELET A

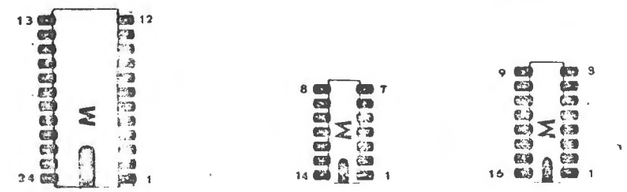
ADD WIRE

2	M16 PIN 11 TO EYELET LEADING TO M19 PIN 8
3	M16 PIN 12 TO EYELET LEADING TO M18 PIN 4
4	M16 PIN 13 TO M[illegible] PIN 11
5	M11 PIN 10 TO EYELET LEADING TO M22 PIN 1
6	M22 PIN 9 TO EYELET LEADING TO M23 PIN 8
7	M22 PIN 10 TO EYELET LEADING TO M18 PIN 11
8	M22 PIN 12 TO EYELET LEADING TO STB 12 PIN 6
9	M22 PIN 13 TO EYELET LEADING TO M19 PIN 8
10	M22 PIN 11 TO M19 PIN 9



NOTE:
1 ALL JUMPER WIRES ARE TO BE FASTEN TO BOARD USING ITEM 4, 10 PLACES MARKED (○)

ITEM NO	REFERENCE DESIGNATION
24	CR1
23	STB 10, 12, 21
22	Q2
21	Q1
20	C1
19	C2
18	C5
17	C3, C4
16	C6, C7
15	R2
14	R3
13	R12
12	R8, 9
11	R1, 4, 5, 6, R7, R10, R11, R13, R14, R15
10	N3
9	M1, 2, 6, 7, 17, 18, 20
8	M27
7	M26
6	M19, 24
5	M8
4	M4, 11, 14
3	M23
2	M9, 15, 16
1	M5, 13, 25, 22



PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.

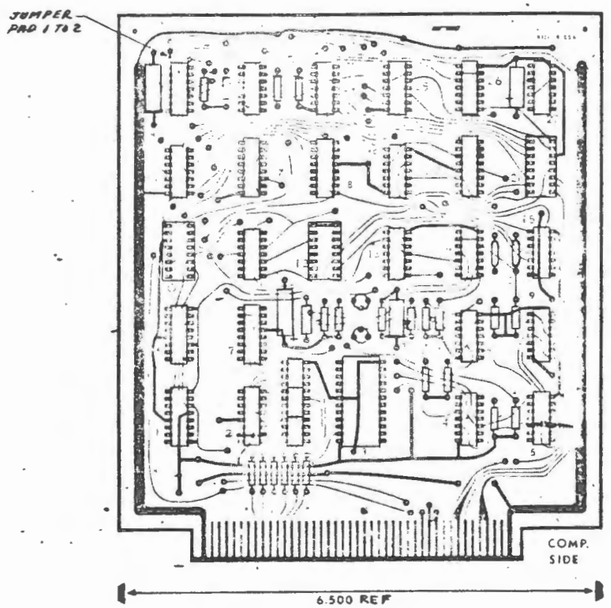
702

INCOTERM CORPORATION — Hayes International Drive, Massachusetts 01752

P.C. BOARD ASSY
LOGIC PATH FROM MULTIPLEXER
702

007-02-02 A

REVISIONS			
REV	DESCRIPTION ECO #	CHK	APPD
A	RELEASED 7/26/71	[illegible]	[illegible]
B	REVISED/ECC1655 9/71	[illegible]	[illegible]
B1	REV. CHANGE ONLY/ECO 2378	[illegible]	[illegible]
B2	REV. CHANGE ONLY/ECO 2477	[illegible]	[illegible]



ITEM NO	REFERENCE DESIGNATION
33	R16,17,18,19,20,21
32	M28,29,30
24	CR1
23	STB10,12,21
22	Q2
21	Q1
20	C1
19	C2
18	C5
17	C3,C4
16	C6,C7
15	R2
14	R3
13	R12
12	R8,9
11	R1,4,5,6,7,10,11,13,14,15
10	M3
9	M1,2,6,7,17,18,20
8	M27
7	M26
6	M13,24
5	M8
4	M4,11,14
3	M23
2	M9,15,16
1	M5,13,22,25

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.

PIN NUMBERING AND ORIENTATION

COMPONENT SIDE

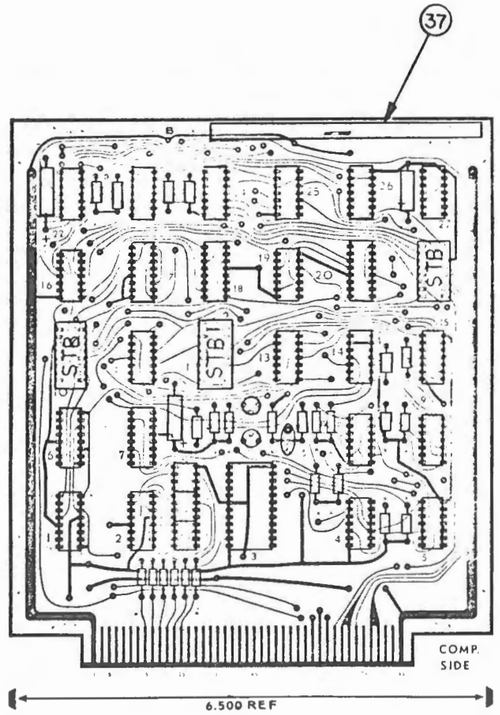
INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

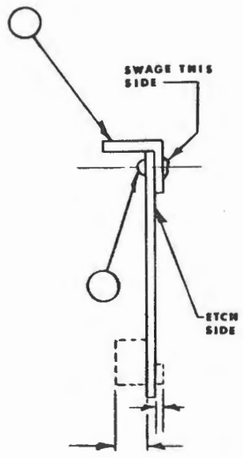
P.C. BOARD ASSY
DATA FLOW BRD
MULTIPLEXER 703

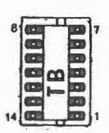
D 007-02-02 B2

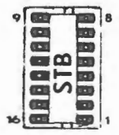
007-10-01

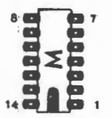
REVISION HISTORY				
REVISION		DESCRIPTION	DATE	CHK

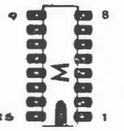












PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
33	R16,17,18,19,20,21
32	M28,29,30
24	CR1
23	STB10,12,21
22	Q2
21	Q1
20	C1
19	C2
18	C5
17	C3,4
16	C6,7
15	R2
14	R3
13	R12
12	R8,9
11	R1,4,5,6,7,10,11,13,14,15
10	M3
9	M1,2,6,7,17,18,20
8	M27
7	M26
6	M19,24
5	M8
4	M4,11,14
3	M23
2	M9,15,16
1	M5,13,22,25

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN, REVISION LABEL, ITEM 37 AND MARK ASSY NO. 007-06-02-701 AND LATEST ASSEMBLY REVISION.

COMPONENT SIDE

ASSEMBLE WITH ARTWORK 007-06-03-701 REV. B

INCOTERM CORPORATION
Memorial Drive
Hopkinton, Massachusetts 01752

This document is the property of INCOTERM Corporation and is loaned on the express condition that it is not to be disclosed, published or reproduced in whole or in part, or used for manufacturing purposes except by written permission of INCOTERM Corporation, and that no rights in any invention disclosed herein are granted except by written license agreement with INCOTERM Corporation.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

DR D. Cruz — DATE 4/7/83
CHK
ENG
APPD
NEXT ASSY 010-10-010

P.C. BOARD ASSY
DATA FLOW BOARD
MULTIPLEXER 701B

SIZE	PC	SS	NO	REV
D	007-06-02			B3

SCALE 1:1 SHT 5 OF 5

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APVD
B1	RELEASED TO ECO		

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTORS VALUES ARE IN OHMS ARE 1/4W, ±5%
   B. ALL CAPACITOR VALUES ARE IN MICR-FARADS.

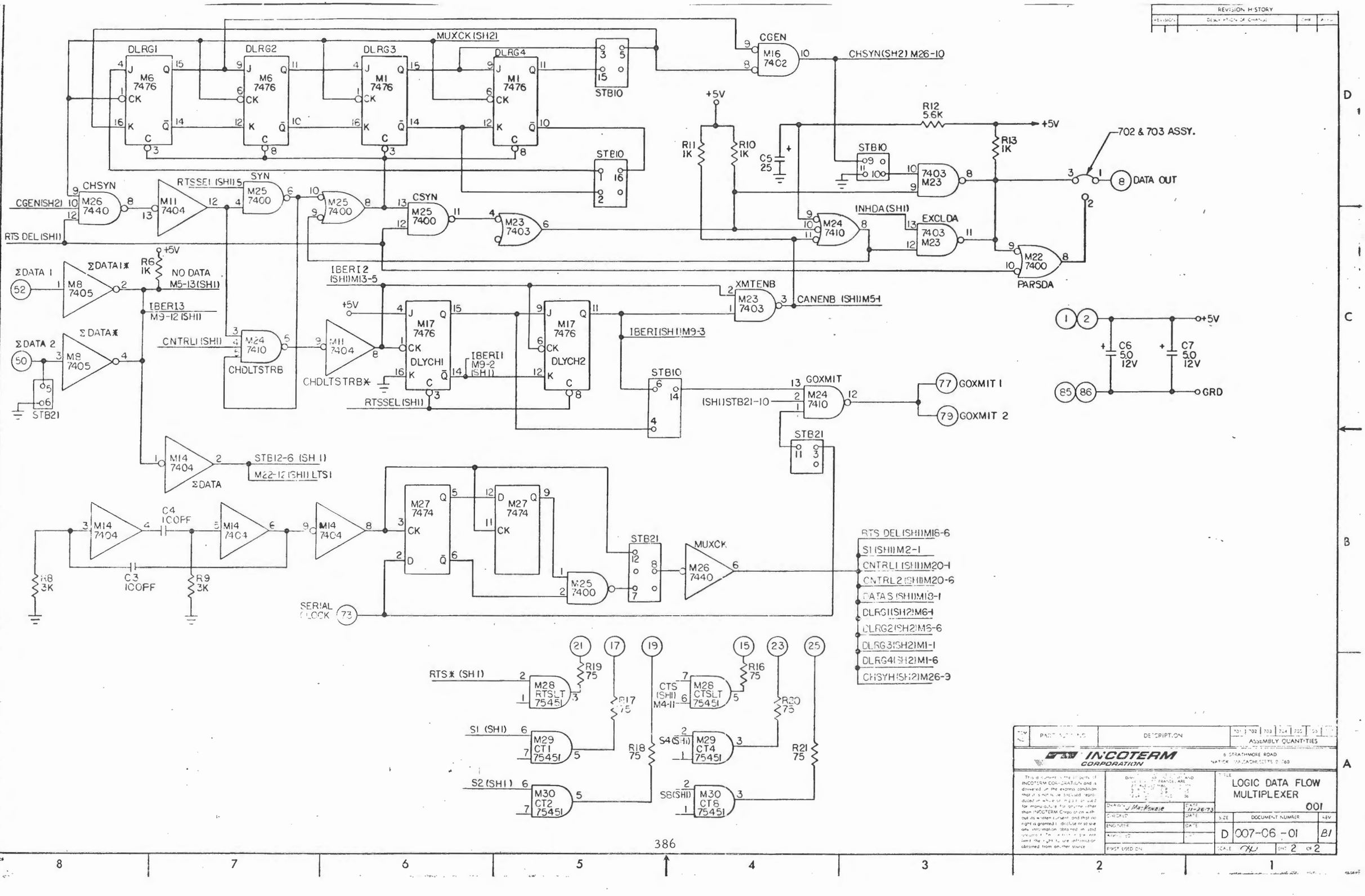
HIGHEST REF DES USED					ITEM	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES
R22	M30	CR1	Q2	C5				
REF DES NOT USED								

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

LOGIC DIAGRAM
DATA FLOW
MULTIPLEXER 001

SIZE	DOCUMENT NUMBER	REV
D	007-06-01	B1

SCALE: NONE SHEET 1 OF 2



REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	DATE	APP'D

ITEM NO.	PART NUMBER	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK, MASSACHUSETTS 01760

This is a document of the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacturing for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or use any information contained in said document. The acceptance of this document constitutes the right to use information obtained from another source.

TITLE: LOGIC DATA FLOW MULTIPLEXER 001

DRAWN: J MacKenzie	DATE: 11-26-73	
CHECKED	DATE	
ENGINEER	DATE	
APPROVED	DATE	
FIRST USED ON		

SIZE	DOCUMENT NUMBER	REV
D	007-06-01	B1

SCALE: NONE | SHT 2 OF 2

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
B1	REDRAWN/ECO		

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A. ALL RESISTORS VALUES ARE IN OHMS AND ARE 1/4W, ±5%,
   B. ALL CAPACITOR VALUES ARE IN MICRO FARADS.

HIGHEST REF DES USED	ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
R22 M30 CR1 Q2 C5				ASSEMBLY QUANTITIES						
REF DES NOT USED										

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

THIS DRAWING AND THE PROPERTY OF INCOTERM CORPORATION AND IS LOANED IN THE EXPRESS CONFIDENCE THAT IT IS NOT TO BE DISCLOSED REPRODUCED IN WHOLE OR IN PART OR USED FOR MANUFACTURE FOR ANYONE OTHER THAN INCOTERM CORPORATION WITH WHOM IT HAS NO OTHER AGREEMENT AND FROM WHOM ANY PART OR ALL OF IT MUST BE RETURNED UPON REQUEST AND IN ANY EVENT UPON COMPLETION OF THE USE FOR WHICH IT IS LOANED.

DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCE ARE: .X ±.1, .XX ±.01, .XXX ±.005, ANGLES ±1°

DRAWN	Mg Servic	11/26/73
CHECK	G. Wood	4/24/74
ENG APPR		
MFG APPR		1/16/74
QUALITY CK		

TITLE: LOGIC DIAGRAM DATA FLOW MULTIPLEXER 002

SIZE	DOCUMENT NUMBER	REV
D	007-02-01	B1

SCALE NONE SHT 1 OF 2

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

DLRG1 DLRG2 DLRG3 DLRG4 — M6 7476 / M6 7476 / M1 7476 / M1 7476

MUXCK(SH12)

STB10

CGEN — M16 7402 — CHSYN(SH2)

+5V

R11 1K, R10 1K, C5 25

R12 5.6K, R13 1K

STB10 — 7403 M23 — DATA OUT / 702&703 ASSY

CGEN(SH2) — CHSYN — M26 7440 — M11 7404 — RTSSEL(SH11) — SYN — M25 7400 — M25 7400

RTS DEL(SH11)

CSYN — M25 7400 — M5-11(SH11) — M23 7403

INHDA(SH11) — M24 7410 — EXCLDA — 7403 M23

M22 7400 — PARSDA

ΣDATA 1 (52) — M8 7405 — ΣDATA1* — R6 1K — NO DATA M5-13(SH11)

M23 7403

ΣDATA 2 (50) — M8 74C5 — ΣDATA* — C5, C6 — STB21

CNTRL1(SH11) — M24 7410 — M11 7404

M17 7476 / M17 7476

STB10 — STB21

GOXMIT — M24 7410 — ISH11STB21-10 — 77 GOXMIT 1 / 79 GOXMIT 2

C6 5.0 12V, C7 5.0 12V — +5V, GRD (65, 86)

M14 7404 — ΣDATA — STB12-6(SH11) — M22-12(SH11) LTS1

C4 100PF — M14 7404 — M14 7404 — M11 7404

R8 3K, C3 100PF, R9 3K

M27 7474 / M27 7474 — M25 7400 — STB21 — MUXCK — M26 7440

SERIAL CLOCK (73)

RTS DEL(SH11)M18-6
S1(SH11)M2-1
CNTRL1(SH11)M20-1
CNTRL2(SH11)M20-6
DATAS(SH11)M18-1
DLRG1(SH2)M6-1
DLRG2(SH2)M6-6
DLRG3(SH2)M1-1
DLRG4(SH2)M1-6
CHSYN(SH2)M26-9

RTSA (68), RTSB (70), RTSC (72), RTSD (74) — M5 7400, M9 7402, M9 7402, M9 7402, M5 7400, M9 7402 — M15 7402 — 78 ONE RTS

RTS* (SH11) — M28 RTSLT 75451 — R19 75

S1 (SH1) — M29 CT1 75451 — R17 75

S2(SH11) — M30 CT2 75451 — R18 75

CTS (SH1) M41 — M26 CTSLT 75451 — R15 75

S4(SH11) — M29 CT4 75451 — R20 75

S8(SH11) — M30 CT8 75451 — R21 75

703 ASSY ONLY

ITEM NO	PART ASSY NO	DESCRIPTION	QTY REQ	QTY REQ	QTY REQ	QTY REQ	QTY REQ	QTY REQ
			ASSEMBLY QUANTITIES					

INCOTERM CORPORATION — 6 PINE TREE DRIVE, SUITE 60

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation, without its written consent, and that no right is granted to disclose or use any information contained in said document. Title to the information is not transferred and the use of the information is not to be obtained from another source.

DRAWN J MacFarlane DATE 11-26-73
CHECKED DATE
ENGINEER DATE
ESTIMATED DATE
FIRST USED ON

TITLE: LOGIC DATA FLOW MULTIPLEXER 002

SIZE D | DOCUMENT NUMBER 007-02-01 | REV B1

DATE 7/4 | SHEET 12 OF 2

388

8 7 6 5 4 3 2 1 — D C B A

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD
A1	REDRAWN / ECO		

+5V R14 1K R15 1K CR1 IN4148 C1 1 R2 10K Q1 2N3906 R1 1K

M8 7405 M8 7405 M8 7405 M8 7405

CTS*(SH1)M4-11 STB10

MUXCK(SH2)

M13 7400 M13 7400 M13 7400 M13 7400

M16 7402 M15 7402 M15 7402

M18 7476 RTS DEL

CHSYN(SH2) M26-12
CSYN(SH2) M26-12
PARSDA (SH2) M26-10

RTSLT (SH2) M28-2

RTS 56

M4 7404

M11 7404

M13 7400

M19 7410

M14 7404

M14 7404

M1 7404

M4 7404

M4 7404

M4 7404

M4 7404

M4 7404

M4 7404

M4 7404

M11 7404

M11 7404

M11 7404

M16 7402

M19 7410

M19 7410

M19 7410

M16 7402

M5 7400

M5 7400

M5 7400

M15 7402

M15 7402

M20 7476 CNTRL1

M20 7476 CNTRL2

M18 7476 DATAS

M2 7476 S1

M2 7476 S2

M7 7476 S4

M7 7476 S8

M22 7400

M22 7400

M22 7400

M3 74154

STB12

STB21

STB21

STB12

STB21

STB12

44 ΣRTS1

45 ΣRTS2

CARRIER 10

R3 8.2K R4 1K C2 0.22 Q2 2N3904

ΣDATA (SH2)

48 DATA/ NO DATA

(RTS) (SELECTED) 1 61 R5 1K +5V

(RTS) (SELECTED) 2 62

RTSSEL

NO DATA

ΣDATA* (SH2)

M25-5 SYN'(SH2)

CTS* 58 CTS(SH2)M28-7

STB10-13(SH11)

RTS SELECTED DATA 1 65 R7 1K +5V

RTS SELECTED DATA 2 66

71 CANCEL B2

69 CANCEL B1

67 LAST TO SEND

GOXMIT(SH2)M24-2

LTSI

ΣDATA (SH2)

CHDLTSTRB (SH2)M24-4

INHDA

EXCL DA (SH2) M23-13

CT1(SH2) M29-6

CT2 (SH2) M30-6

CT4 (SH2) M29-2

CT8 (SH2) M30-2

SELA 30
SELB 32
SELC 34
SELD 36
SELF 38
SELG 40
SELH 42
SELI 28
SELA' 26
SELB' 24
SELC' 22
SELD' 12
SELF' 14
SELG' 16
SELH' 18
SELI' 20

DSR* ALL CANCEL 80

63 CANCEL A1
64 CANCEL A2

ITEM NO	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707

INCOTERM CORPORATION
6 STRATHMORE ROAD
NATICK MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in it. If this print is a copy, use information contained from another source.

DRAWN J.M. KENZIE 11/26/73
CHECKED Phinney
ENGINEER
1/24/74

TITLE: LOGIC DIAGRAM DATA FLOW MULTIPLEXER 003

SIZE D | DOCUMENT NUMBER 007-02-01 | REV A1

FIRST USED ON

SCALE NONE SHT 1 OF 2

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	CHK	APPD

DLRG1 M6 7476 · DLRG2 M6 7476 · DLRG3 M1 7476 · DLRG4 M1 7476 · MUXCK (SH2)

STB10 · STB21

CGEN M16 7402 → CHSYN (SH2) M26-10

+5V · R11 1K · R10 1K · C5 25 · R12 5.6K · R13 1K

CHSYN M26 7440 · CGEN (SH2) · RTS DEL (SH1) · M11 7404 · RTSSEL (SH1) 5 · SYN M25 7400 · M25 7400 · CSYN M25 7400 · M23 7403

INHDA (SH1) · EXCLDA 7403 M23 · M24 7410 · M22 7400 PARSDA · 7403 M23 · 705 ASSY · DATA OUT

ΣDATA 1 (52) · M8 7405 · ΣDATA1* · R6 1K · NO DATA (SH1) M5-13

ΣDATA 2 (50) · M8 7405 · ΣDATA* · STB21

CNTRL1 (SH1) · M24 7410 · CHDLTSTRB · M11 7404 · M17 7476 · M17 7476 · M23 7403

STB10 · (SH1) STB21-10 · M24 7410 · GOXMIT · 77 GOXMIT 1 · 79 GOXMIT 2

+5V (1) (2) +5V · C6 5.0 12V · C7 5.0 12V · GRD (85) (86) GRD

M14 7404 · STB12 (SH1) · M22-12 (SH1) LTS1 · ΣDATA

C4 100PF · C3 100PF · R8 3K · R9 3K · M14 7404 · M14 7404 · M14 7404

M27 7474 · M27 7474 · M25 7400 · STB21 · MUXCK · M26 7440

SERIAL CLOCK (73)

RTS DEL (SH1) M18-6
SI (SH1) M2-1
CNTRL1 (SH1) M20-1
CNTRL2 (SH1) M20-6
DATA S (SH1) M18-1
DLRG1 (SH2) M6-1
DLRG2 (SH2) M6-6
DLRG3 (SH2) M1-1
DLRG4 (SH2) M1-6
CHSYN (SH2) M26-9

RTSA (68) · RTSB (70) · RTSC (72) · RTSD (74) · M5 7400 · M9 7402 · M9 7402 · M9 7402 · M5 7400 · M15 7402 · (78) ONE RTS

RTS* (SH1) · M28 RTSLT 75451 · R19 75 · R17 75 · R18 75

SI (SH1) · M29 CT1 75451

S2 (SH1) · M30 CT2 75451

CTS* (SHT M4-1) · M28 CTS 75451 · R16 75 · R20 75

S4 (SH1) · M29 CT4 75451

S8 (SH1) · M30 CT8 75451 · R21 75

705 ASSY. ONLY

ITEM	PART ASSY NO	DESCRIPTION	ASSEMBLY QUANTITIES 701	702	703	704	705	706	707
-									

INCOTERM CORPORATION — 5 STRATHMORE ROAD, NATICK, MASSACHUSETTS, 01760

"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture by anyone other than INCOTERM Corporation, without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

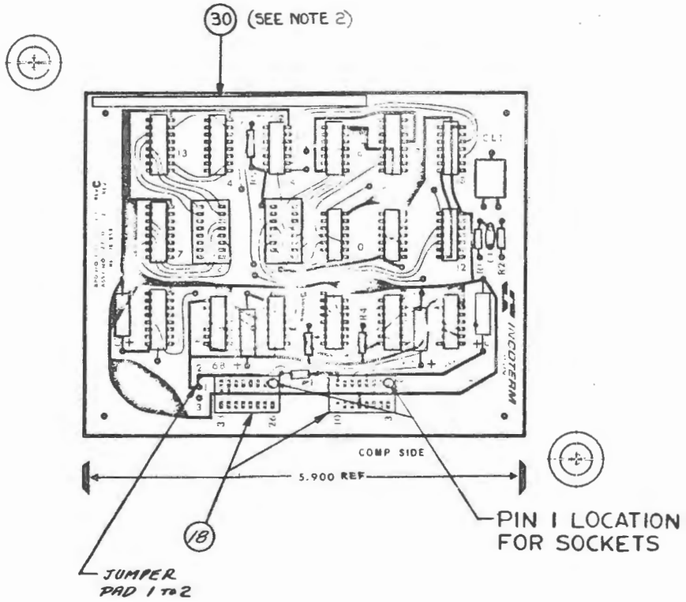
DIMENSIONS ARE IN INCHES AND GENERAL TOLERANCE ARE ± .XX ± .XXX ± ANGLES ± 1°

TITLE: LOGIC DATA FLOW MULTIPLEXER - 003

DRAWN	J MacKenzie	DATE 11-26-73	SIZE	DOCUMENT NUMBER / REV
CHECKED		DATE	D	007-02-01 / A1
ENG MFG		DATE		
APPROVED		DATE		
FIRST USED ON			SCALE	SHT 2 of 2

390

8 7 6 5 4 3 2 1 · D C B A



PIN NUMBERING AND ORIENTATION

ITEM NO.	REFERENCE DESIGNATION
29	R3,R4
28	CR2
27	M4
26	M2,M6,M11
25	
24	
23	C4,C5
22	C2,C3
21	C1
~~20~~	~~CR1~~
~~19~~	~~Q1~~
18	STB8,STB9
~~17~~	~~R6~~
16	R5
~~15~~	~~R3,R4~~
14	R1,R2
13	C1
12	M1,M7,M13,M14
~~11~~	~~M4~~
~~10~~	~~M2,M3,M6,M11~~
9	M17
8	M10
7	M16
6	M15
5	M12
4	M5,M18
3	
2	
1	

NOTE:

1. **HEIGHT LIMITATIONS.**
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. LOCATE IN APPROXIMATE AREA SHOWN REVISION LABLE ITEM 30, AND MARK ASSY. NO. 027-01-02-703C AND LATEST ASSY. REVISION.
3. THIS ASSEMBLY DRAWING REPLACES THE ASSEMBLY DRAWING USING REVISION 'B' ARTWORK. (BOARDS NEVER PURCHASED AT ARTWORK REVISION 'B')

COMPONENT SIDE
ASSEMBLE WITH ARTWORK 027-01-02-701 REV C

INCOTERM CORPORATION
Wayne Memorial Drive
Westborough, Massachusetts 01752

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .03 2PLCS)
ANGLES 2°

P.C. BOARD ASSY
MODEM ELIMINATOR
703C

DR	DATE				
CHK		P.C.	S.S.	NO.	REV
ENG		D	027-01-02		A6
APPD					
NEXT ASSY 027-01-01-703	SCALE 1:1	SHT 2 OF 2			

REVISION HISTORY

REVISION	DESCRIPTION OF CHANGE	BY	DATE

C1 1000 PF
R1 470Ω
R2 470Ω
12.6 MC CL 1
7404 M12
7404 M12
7404 M12

DTR A (10) — (26) DSR B
DSR A (6) — (32) DTR B
XMIT DATA A (9) — (29) REC DATA B
REC DATA A (3) — (33) XMIT DATA B

9316 M1 CP TC Q0 Q1 Q2 Q3 MR
CEP 9316 M7 CP TC Q0 Q1 Q2 Q3 MR
CET 9316 M13 CP TC Q0 Q1 Q2 Q3 MR
CET 9316 M14 CP TC Q0 Q1 Q2 Q3 MR

STB 9
STB 8

7430 M16
7410 M15
7402 M18
7402 M18
7404 M12
7410 M15

7476 M17 J CK K Q
7474 M10 CK D Q
7474 M10 CK D Q

μA9616 M6 → (38) TRANSMISSION SIGNAL TIMING ELEMENT A
μA9616 M6 → (39) RECEIVER SIGNAL TIMING ELEMENT A
μA9616 M2 → (61) TRANSMISSION SIGNAL TIMING ELEMENT B
μA9616 M2 → (62) RECEIVER SIGNAL TIMING ELEMENT B
μA9616 M11 → (5) CLEAR TO SEND A
μA9616 M2 → (31) RECEIVED LINE SIGNAL DETECTOR B
μA9616 M6 → (28) CLEAR TO SEND B
μA9616 M11 → (8) RECEIVED LINE SIGNAL DETECTOR A

REQ TO SEND A (4) — R4 18K — -14V — SN75154 M4
REQ TO SEND B (27) — R3 18K — -14V — SN75154 M4

7404 M12
7402 M5
7402 M5
7402 M5
7402 M5
7404 M12
7404 M12

STB 9
STB 9

+5V — R5 1K

CR2 IN1418
(45) -14 VDC
(43) +14 VDC
(41) +5 VDC
C2 5UF 12V
C3 5UF 12V
C4 5UF 25V
C5 5UF 25V
(40) (7) (67) (68) GRD

APPLICABLE TO P.C. BOARD ARTWORK
027-01-03-701 REV. B OR GREATER

ITEM NO	PART ASSY NO	DESCRIPTION

INCOTERM CORPORATION
5 TRAFALGAR ROAD
HAMPTON, MASSACHUSETTS 01843

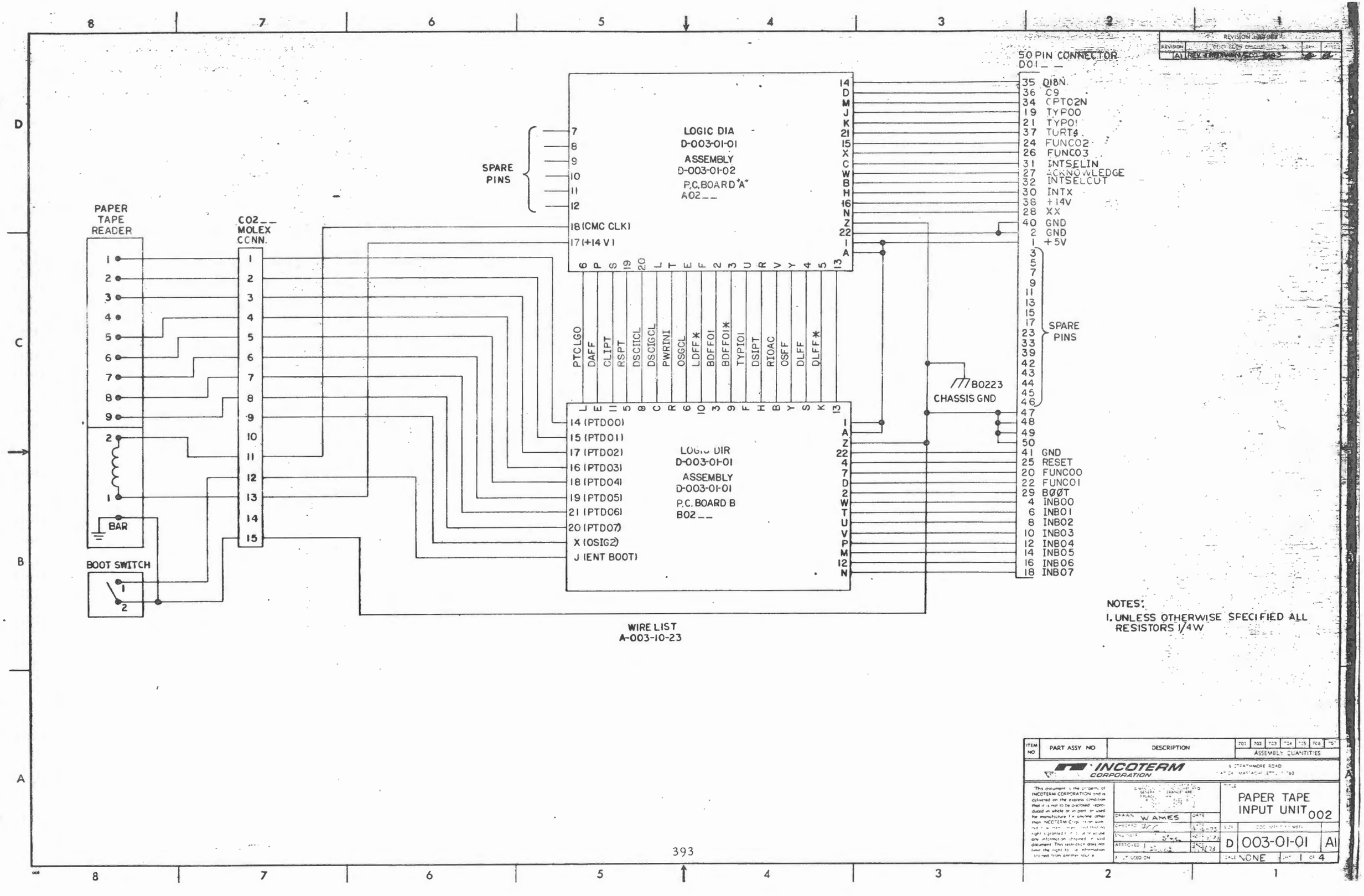
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corp. all in accordance with ... agreement. This agreement does not convey the right to use the information ... without written permission."

DRAWN Jon Clegg 2/26/75
CHECKED
ENGINEER
APPROVED
FIRST USED ON

LOGIC DIAGRAM
MODEM
ELIMINATOR 002

D 027-01-01 C1

SHT 2 OF 2



WIRE LIST
A-003-10-23

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS 1/4W

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION
5 STRATHMORE ROAD

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to circulate or disclose any information contained in said document. This restriction does not limit the right to use information obtained from another source.

DRAWN W AMES DATE
CHECKED
ENG MGR
APPROVED
NEXT USED ON

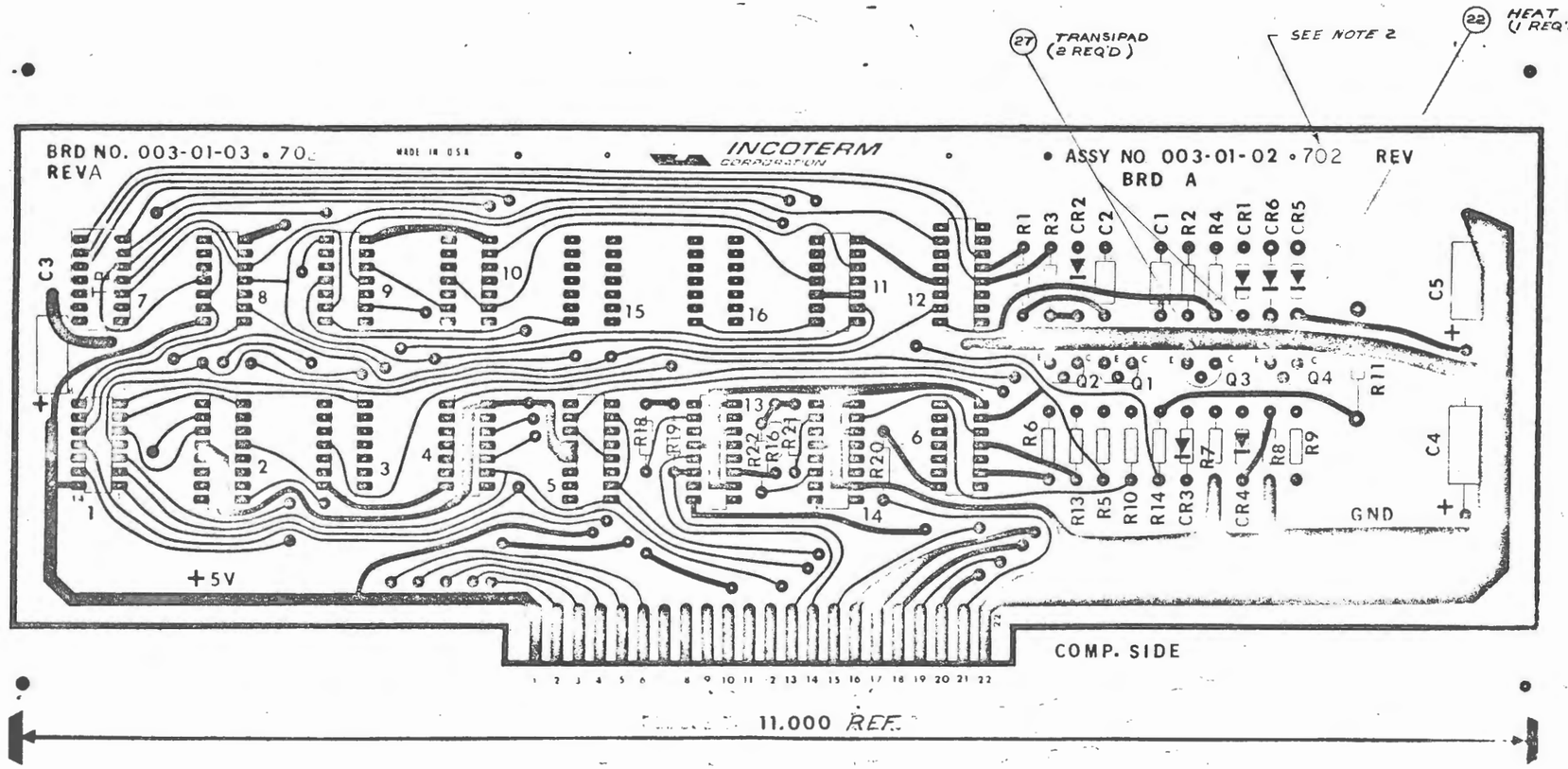
PAPER TAPE INPUT UNIT 002

D 003-01-01 A1

SCALE NONE SHT 1 OF 4

REV	DESCRIPTION	CHK	APPD
A	RELEASED 12-29-77 RD# 238	~	~
A1	REV. CHANGE ONLY/ECO 2378	~	~
A2	REV. CHANGE ONLY/ECO 2477	~	~

SWAGE THIS SIDE



ITEM NO	DESIGNATION
32	M13, M14
31	R16, 18, 19, 20, 21, 22
27	TRANSIPAD (Q3, Q4)
22	HEAT SINK (Q4)
21	C5
20	C1, C2
19	C3, C4
17	R11
16	R10
15	R3, R4
14	R1, R2
13	R5-R9, R13, R14
12	CR6
11	CR5
10	CR1-CR4
9	Q3, Q4
8	Q1, Q2
7	TB7
6	M2, 5, 12
5	M10, 11
4	M6
3	M3, 4
2	M9
1	M1, 8

NOTE :
1. HEIGHT LIMITATIONS.
   COMPONENT SIDE OF BOARD .400 MAX.
   ETCH SIDE OF BOARD .080 MAX.
2. MARK .12 HIGH VERTICAL GOTHIC CHARACTERS (BLACK, USING ACRILIC BASE INK.

"This document is the property of INCOTERM Corporation and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."

INCOTERM CORPORATION
Hayes Memorial Drive
Marlborough, Massachusetts 01752

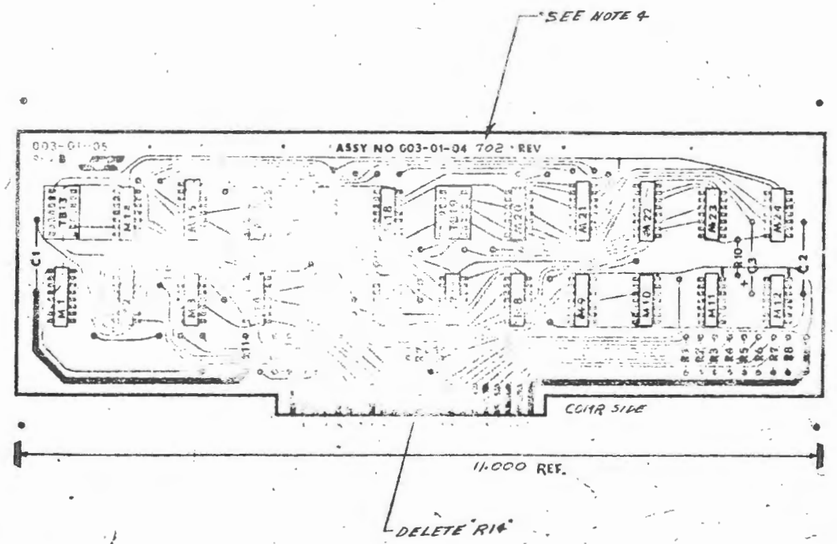
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .005 (3PLCS) .02 (2PLCS)
ANGLES 2°

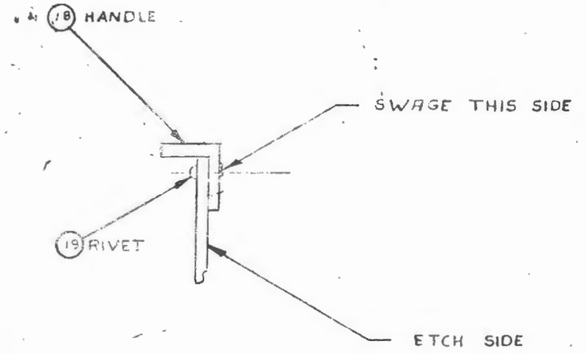
TITLE
P.C. BOARD ASSY
PAPER TAPE
BOARD "A" 702

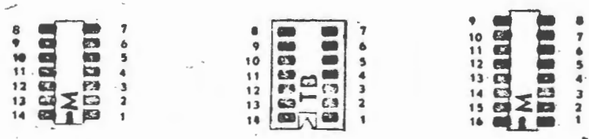
DR | DATE
CHK
ENG
APPD
NEXT ASSY 003-01-702

SIZE D | DWG NO 003-01-02 | REV A2
SCALE | WT | SHT 1 OF 1

REVISIONS			
REV	DESCRIPTION 238	CHK	APPD
A	RELEASED 4-29-71		
A1	ECO 2113 CHANGES THIS DOCUMENT STRUCTURE PER PROCEDURE 300-002. SEE SHEET 1 FOR CONTINUING REVISION ASSIGNMENT HISTORY.		







PIN NUMBERING AND ORIENTATION

4. MARK .12 HIGH VERTICAL GOTHIC (BLACK) CHARACTERS USING ACRYLIC BASE INK.
3. COMPONENT TERMINATING LEADS TO BE CLINCHED OR NON-CLINCHED PRIOR TO SOLDERING.
2. MAXIMUM HEIGHT OF LEAD PROTRUSIONS CLINCHED OR NON-CLINCHED TO BE .080 MAX.
1. COMPONENT HEIGHT TO BE .400 MAX. INCLUDING SHIELD COVERS, TEST SOCKETS WITH EXTERNAL PLUGS, ETC.

NOTES:

MAKE FROM 003-01-04-701 BY REMOVING R14

ASSEMBLE WITH ARTWORK 003-01-05-701 REV. B

INTERNATIONAL COMPUTER TERMINALS CORP.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS ± .005 (.13 MM) ANGLES ± 2°

TITLE P.C. BRD ASSY BOARD B PAPER TAPE

D 003-01-04 A5

REVISIONS			
REV	DESCRIPTION	CHK	APPD

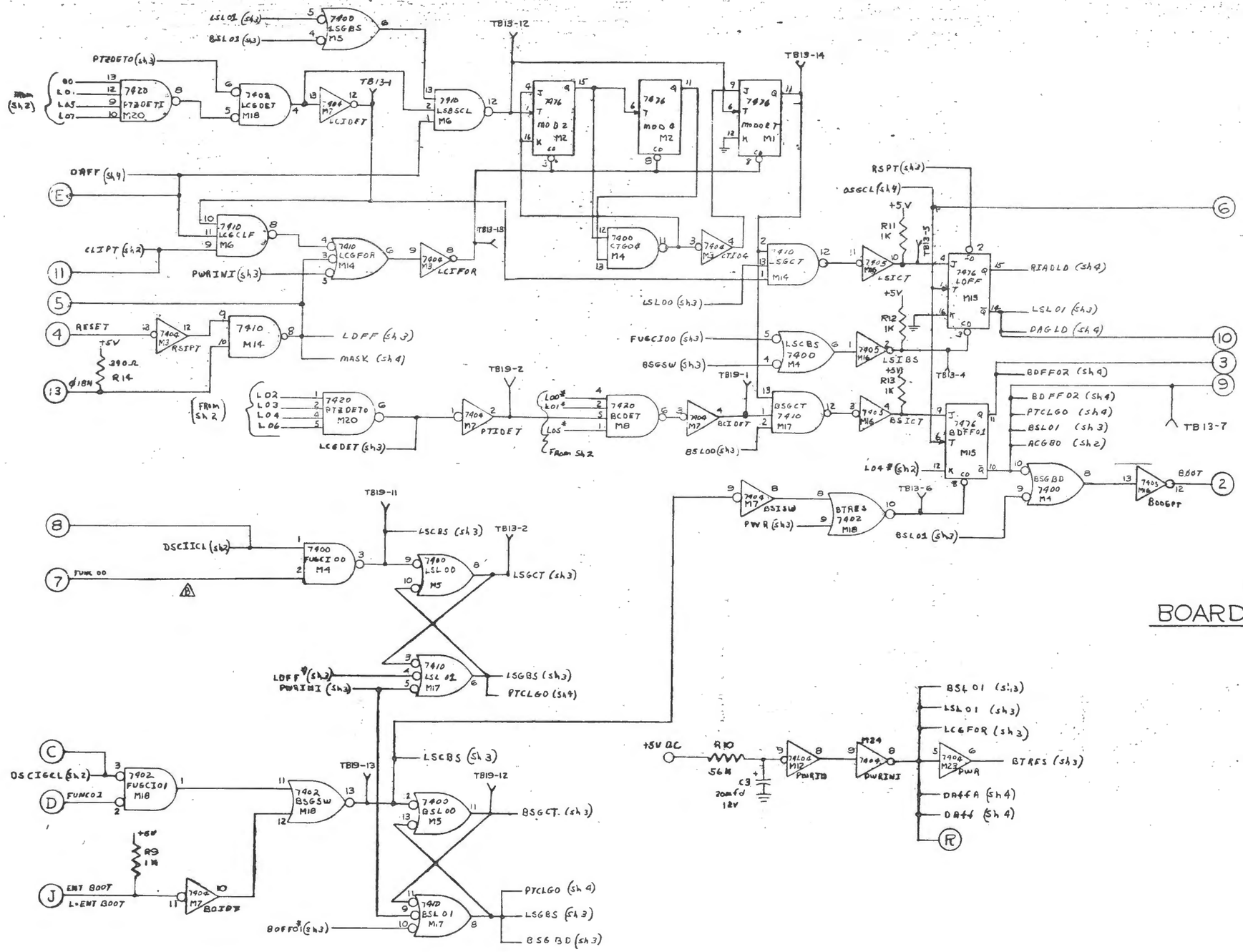
BOARD "A"

BOARD "B"

INTERNATIONAL COMPUTER TERMINALS CORP.					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: DECIMALS ± .005 (3PLCS) ± .02 (2PLCS) ANGLES ± 2°		TITLE: PAPER TAPE INPUT UNIT 001			
DR	DATE				
CHK		SIZE: D	P.C. 003-01-01	S.S.	NO. REV: B
ENG					
APPD					
NEXT ASSY		SCALE: 1/1			SHT - OF -

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.

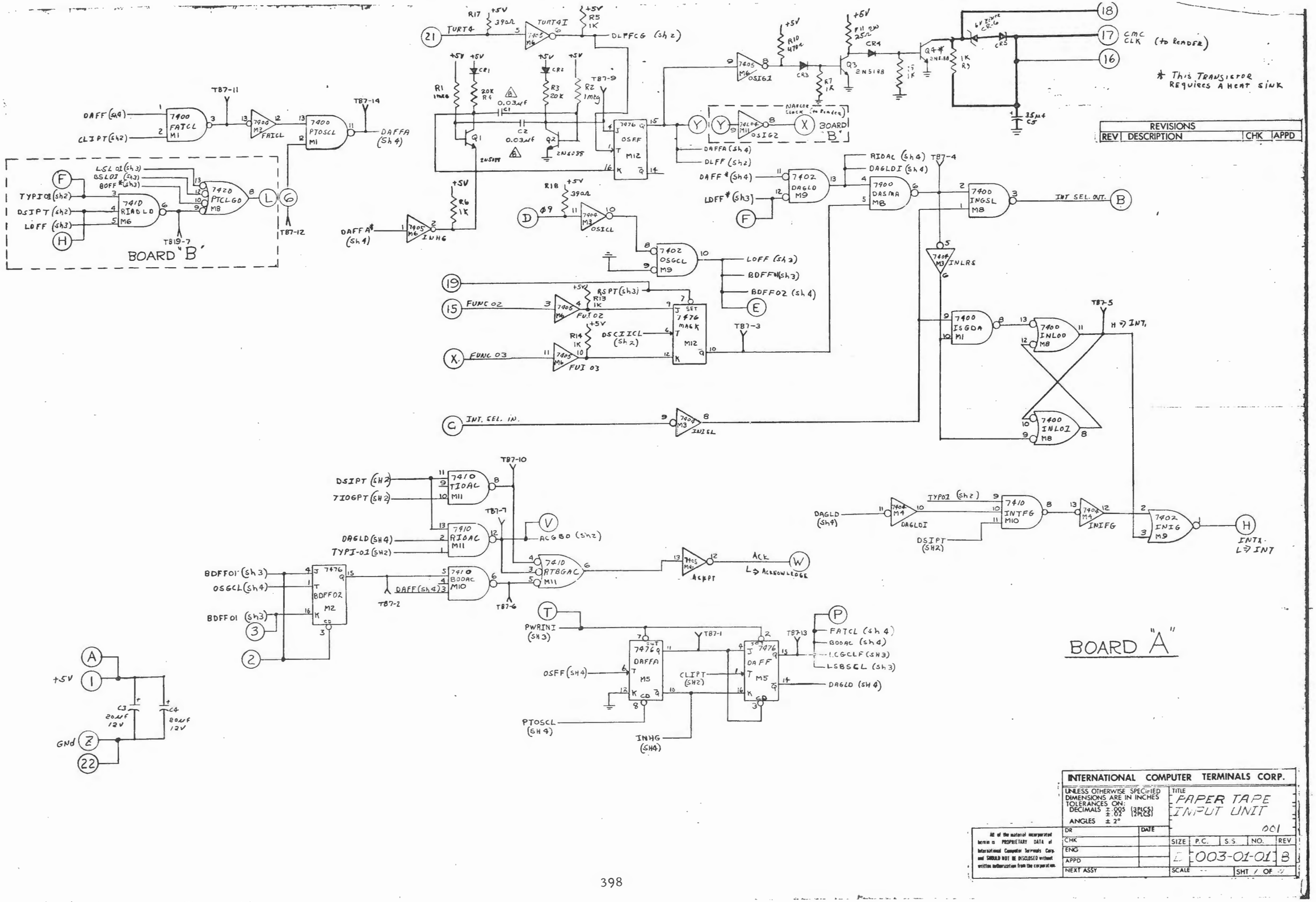
REVISIONS			
REV.	DESCRIPTION	CHK	APPD



BOARD "B"

INTERNATIONAL COMPUTER TERMINALS CORP.						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: DECIMALS ± .005 (3PLCS) ± .02 (2PLCS) ANGLES ± 2°			TITLE: PAPER TAPE INPUT UNIT 001			
DR	DATE					
CHK		SIZE	P.C.	S.S.	NO.	REV
ENG			003-01-01			B
APPD						
NEXT ASSY		SCALE —		SHT 3 OF 4		

All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.


DAFF (sh4)
CLIPT (sh2)
7400 FATCL M1
7404 M2 FAICL
TB7-11
7400 PTOSCL M1
TB7-14
DAFFA (Sh 4)
TYPI01 (sh2)
DSIPT (sh2)
LOFF (sh3)
7410 RIADLO M6
LSL 01 (sh3)
BSLO1 (sh3)
BOFF (sh3)
7420 PTCLGO M8
TB7-12
TB7-7
BOARD "B"
TURT4
TURT4I
DLFFCG (sh 2)
R17 390Ω
R5 1K
CR1
CR2
R1 1MEG
20K R4
R3 20K
R2 1MEG
0.03μF C1
0.03μF C2
Q1 2N5088
Q2 2N5088
TB7-9
7476 OSFF M12
DAFFA (sh4)
DLFF (sh2)
NAFLOR CLOCK (to RENDER)
7404 M11 OSIG2
BOARD "B"
7405 M6 OSIG1
R10 470Ω
CR3
R7 1K
Q3 2N5188
CR4
R11 200Ω 25W
R8 1K
Q4 2N5188
R9 1K
CR5
35μF C5
* This TRANSISTOR REQUIRES A HEAT SINK
REVISIONS
REV | DESCRIPTION | CHK | APPD
DAFFA* (Sh 4)
7405 M6 INHG
R6 1K
R18 390Ω
Ø9
7404 M3 OSICL
7402 OSGCL M9
LOFF (sh 2)
BDFFN (sh3)
BDFF02 (sh 4)
RIDAC (sh4)
DAGLDI (sh4)
7402 DAGLO M9
DAFF* (sh4)
LDFF* (sh3)
7400 DASMA M8
TB7-4
7400 INGSL M8
INT SEL OUT.
7404 M3 INLRS
7400 ISGDA M1
7400 INL00 M8
7400 INL01 M8
TB7-5
H = INT.
FUNC 02
FUI 02
RSPT (sh3)
R13 1K
FUNC 03
FUI 03
R14 1K
DSCIICL (sh 2)
7476 MASK M12
TB7-3
INT. SEL. IN.
7404 M3 INISL
DAGLD (sh9)
7404 M9 DAGLDI
TYP01 (sh2)
7410 INTFG M10
DSIPT (SH2)
7404 M9 INIFG
7402 INIG M9
INTI- L = INT
TB7-10
7410 TIOAL M11
7410 RIOAC M11
7410 BOOAC M10
7410 RTBGAC M11
ACGBO (sh2)
ACKPT
ACK
L = ACKNOWLEDGE
BDFF01 (sh3)
OSGCL (sh4)
BDFF02 M2
DAFF (sh4)
TB7-2
TB7-6
PWRINI (sh3)
7476 DAFFA M5
7476 DAFF M5
TB7-1
TB7-13
OSFF (sh4)
CLIPT (sh2)
PTOSCL (sh 9)
INHG (sh4)
FATCL (sh 4)
BOOAC (sh4)
LCGCLF (sh3)
LSBSCL (sh3)
DAGLD (sh 4)
BOARD "A"
+5V
C3 20MF 12V
C4 20MF 12V
GND
INTERNATIONAL COMPUTER TERMINALS CORP.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS ± .005 (3PLCS) ± .02 (2PLCS)
ANGLES ± 2°
TITLE
PAPER TAPE INPUT UNIT
001
All of the material incorporated herein is PROPRIETARY DATA of International Computer Terminals Corp. and SHOULD NOT BE DISCLOSED without written authorization from the corporation.
DR | DATE
CHK
ENG
APPD
NEXT ASSY
SIZE | P.C. | S.S. | NO. | REV
D | 003-01-01 | B
SCALE --
SHT / OF

REVISION HISTORY			
REVISION	DESCRIPTION OF CHANGE	CHK	APPD

ADDXXR (SH.4) → DSIPT 7404 M4 (5→6)

CPTO2 (SH.4) → CLPTI 7404 M4 (3→4) → CLIPT 7404 M4 (1→2)

DSIPT 6 → (R)
- MIO-11 INTFG (SH.4)
- MII-13 RIOAC (SH.4)
- MII-1 TIOAC (SH.4)
- M6-4 RIADLD (SH.4) (BRD B)
- M6-9 LCGCLF (SH.3) (BRD B)
- MI-2 FATCL (SH.4)
- M5-1 DAFF (SH.4)
- (S)

CLIPT 2 → 7410 M10 DSCIGCL (2, 13 → 12)

DSCIGCL 12 → DSCIICL 7404 M4 (9→8)

(L) MI8-3 FUGCIOI (BRD B) (SH 3)

DSCIICL 8 → (CIOI) DEV SEL (CLK)

TB7-8 → (20)
- M4-1 FUGCIOO (SH.3) (BRD B)
- MI2-6 MASK (SH 4)

TURT4I (SH.4) → 7400 M1 DLFFCG (4→5, 6)

OSFF (SH.4) → 7476 M2 DLFF (6 CK, 12 K, 11 Q, 10 Q̄, 8)

DLFFCG 6 → (4), (5)

TYPOO (J) → TYPIOO 7404 M3 (3→4) → 7402 M9 TIOGPT (5, 6→4)
- MII-10 TIOAC (SH.4)

TYPOIR (SH.4) → TYPIOI 7404 M3 (1→2)
- M6-3 RIADLD (SH.4) (BRD B)
- MIO-9 INTFG (SH.4)
- MII-1 RIOAC (SH.4)
- (U)

BOARD "A"

BOARD "B"

BOFFOI (SH.3) (BRD A) RIOAC (SH.4) → 7400 M5 ACGBO (2, 1 → 3)

ACGBO 3 → TB19-14

TB19-14 → (S) → TB19-3

TB19-14 → (K)

+5V → R1 100K → PTDOO (14) → 74L04 M11 PTDIOO (11→10) → 7404 M23 PTIOO (13→12) → TB19-9 → M22 LOO (2)

+5V → R2 100K → PTDOI (15) → 74L04 M11 PTDIOI (13→12) → 7404 M23 PTIOI (11→10) → M22 LOI (3)

+5V → R4 100K → PTDO2 (17) → 74L04 M11 PTDIO2 (1→2) → 7404 M23 PTIO2 (1→2) → M22 LO2 (6)

+5V → R3 100K → PTDO3 (16) → 74L04 M11 PTDIO3 (3→4) → 7404 M23 PTIO3 (3→4) → M22 7475 LO3 (7)

+5V → R5 100K → PTDO4 (18) → 74L04 M12 PTDIO4 (11→10) → 7404 M24 PTIO4 (13→12) → TB19-8 → M21 LO4 (2)

+5V → R6 100K → PTDO5 (19) → 74L04 M12 PTDIO5 (13→12) → 7404 M24 PTIO5 (11→10) → M21 LO5 (3)

+5V → R8 100K → PTDO6 (21) → 74L04 M12 PTDIO6 (1→2) → 7404 M24 PTIO6 (1→2) → M21 LO6 (6)

+5V → R7 100K → PTDO7 (20) → 74L04 M12 PTDIO7 (3→4) → 7404 M24 PTIO7 (3→4) → TB13-8 → M21 7475 LO7 (7)

TB19-5 → M22 CLK (13→4)

TB19-4 → M21 CLK (13→4)

TB19-6 → M21 7475 CLK (13→4)

TB19-10 → M21 7475 CLK (13→4)

M22 LOO (Q 16, Q̄ 1)
- M20-13 PTZDETI (SH. 3)
- M8-4 BCDET (SH. 3)

M22 LOI (Q 15, Q̄ 14)
- M20-12 PTZDETI (SH.3)
- M8-2 BCDET (SH.3)

M22 LO2 (Q 10, Q̄ 11)
- M20-1 PTZDETO (SH.3)

M22 7475 LO3 (Q 9, Q̄ 8)
- M20-2 PTZDETO (SH.3)

M21 LO4 (Q 16, Q̄ 1)
- M20-4 PTZDETO (SH. 3)
- MI5-12 BDFFOI (SH. 3)

M21 LO5 (Q 15, Q̄ 14)
- M20-9 PTZDETI SH. 3
- M8-1 BCDET SH. 3

M21 LO6 (Q 10, Q̄ 11)
- M20-5 PTZDETO (SH.3)

M21 7475 LO7 (Q 9, Q̄ 8)
- M20-10 PTZDETI (SH.3)

PTINB00: 7403 M10 (4, 5 → 6) → (W) INB00

PTINB01: 7403 M10 (10, 9 → 8) → (T) INB01

PTINB02: 7403 M10 (13, 12 → 11) → (U) INB02

PTINB03: 7403 M10 (1, 2 → 3) → (V) INB03

PTINB04: 7403 M9 (4, 5 → 6) → (P) INB04

PTINB05: 7403 M9 (10, 9 → 8) → (M) INB05

PTINB06: 7403 M9 (13, 12 → 11) → (12) INB06

PTINB07: 7403 M9 (1, 2 → 3) → (N) INB07

DLIFF: 7404 M7 (5→6)

(A), (+5V) I → +5V
- C1 20 UF 12V → GND
- C2 20 UF 12V → GND

GND (Z), (22)

ITEM NO	PART ASSY NO	DESCRIPTION	701	702	703	704	705	706	707
			ASSEMBLY QUANTITIES						

INCOTERM CORPORATION — 6 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760

This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without its written consent, and that no right to such use or disclosure is granted. It is to be returned on demand and the right to use information contained herein on their source.

DRAWN WAYNES DATE

CHECKED DATE 5-8-73

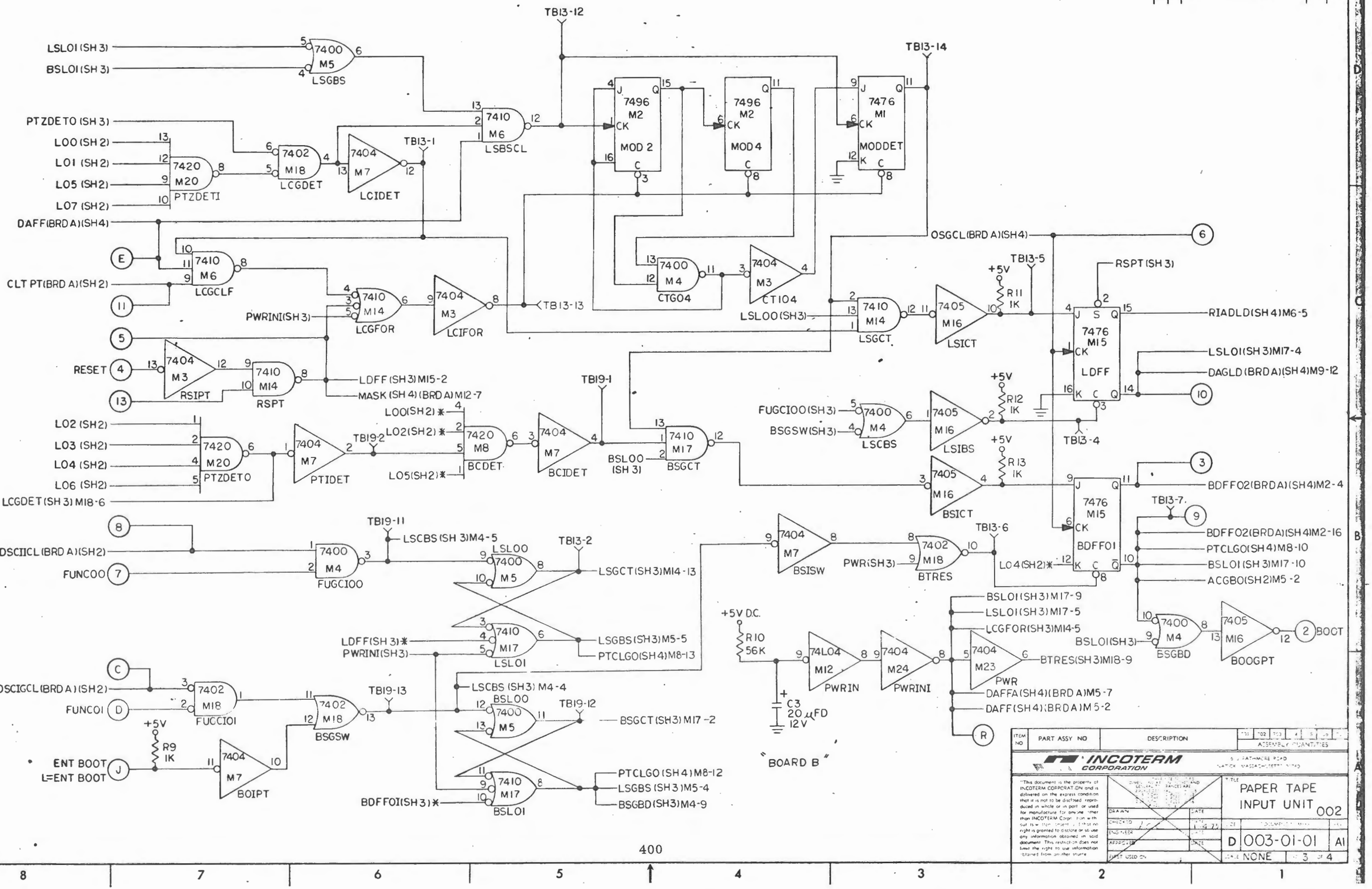
APPROVED DATE

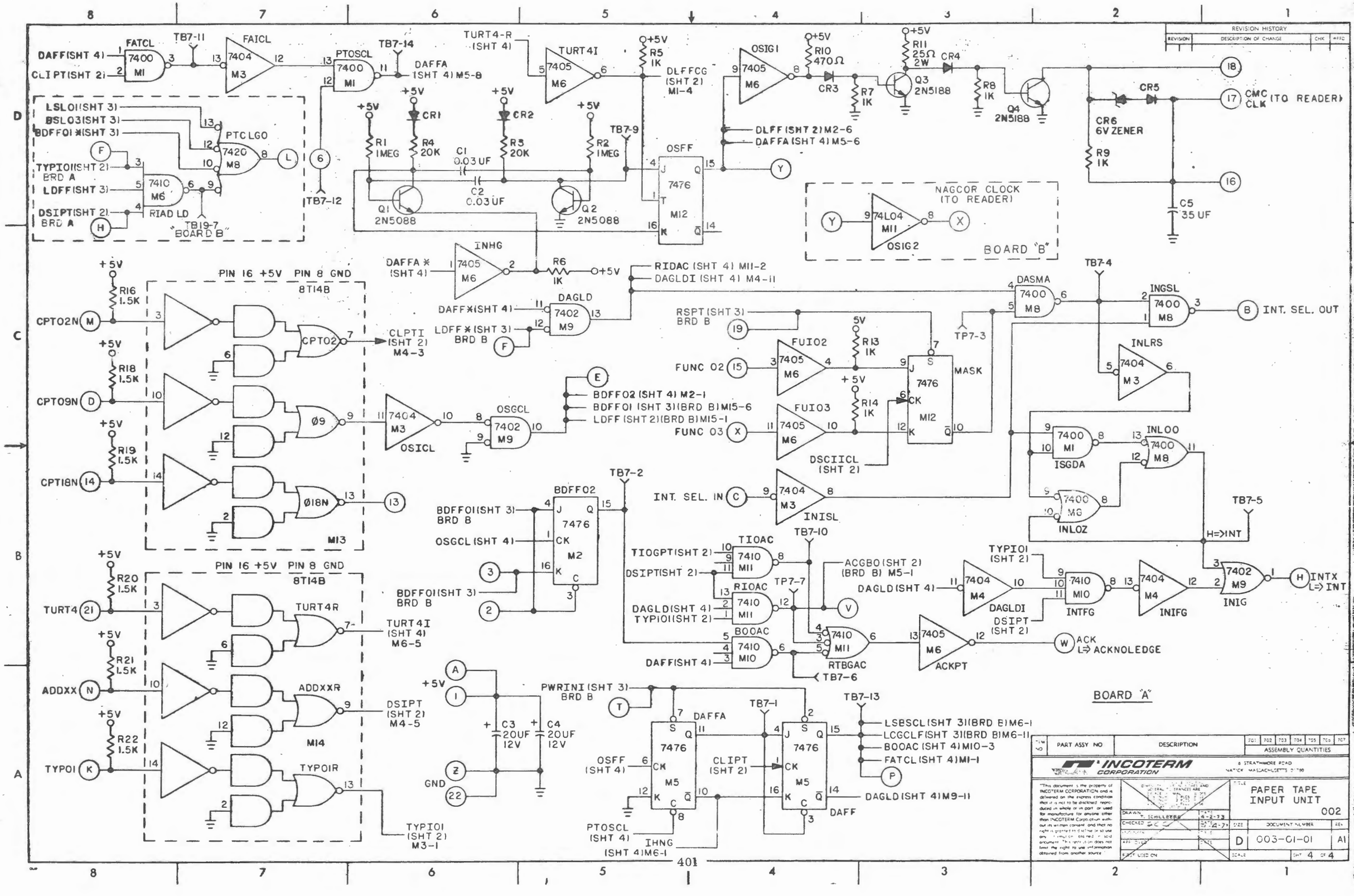
NEXT ASSY USED ON

PAPER TAPE INPUT UNIT 002

SIZE D | DOCUMENT NUMBER 003-01-01 | REV AI

SCALE NONE | SHT 2 OF 4


REVISION HISTORY
REVISION
DESCRIPTION OF CHANGE
CHK
APPD
LSLOI (SH 3)
BSLOI (SH 3)
7400 M5 LSGBS
TBI3-12
TBI3-14
PTZDETO (SH 3)
LOO (SH 2)
LOI (SH 2)
LO5 (SH2)
LO7 (SH2)
7420 M20 PTZDETI
7402 M18 LCGDET
7404 M7 LCIDET
TBI3-1
7410 M6 LSBSCL
7496 M2 MOD 2
7496 M2 MOD 4
7476 MI MODDET
DAFF(BRD A)(SH4)
OSGCL(BRD A)(SH4)
6
E
CLT PT(BRD A)(SH2)
11
7410 M6 LCGCLF
7410 M14 LCGFOR
PWRINI(SH3)
7404 M3 LCIFOR
TBI3-13
7400 M4 CTG04
7404 M3 CT104
7410 M14 LSGCT
LSLOO(SH3)
7405 M16 LSICT
+5V
RII IK
TBI3-5
RSPT (SH 3)
RIADLD(SH4)M6-5
7476 MI5 LDFF
LSLOI(SH3)MI7-4
DAGLD (BRD A)(SH4)M9-12
10
5
RESET
4
13
7404 M3 RSIPT
7410 MI4 RSPT
LDFF (SH3) MI5-2
MASK (SH 4) (BRD A) MI2-7
TBI9-1
LOO(SH2)*
LO2 (SH2)
LO3 (SH2)
LO4 (SH2)
LO6 (SH2)
7420 M20 PTZDETO
LCGDET (SH 3) MI8-6
7404 M7 PTIDET
TBI9-2
LO2(SH2)*
LO5(SH2)*
7420 M8 BCDET
7404 M7 BCIDET
BSL00 (SH 3)
7410 MI7 BSGCT
FUGCIOO(SH3)
BSGSW(SH3)
7400 M4 LSCBS
7405 M16 LSIBS
+5V
R12 IK
TBI3-4
7405 M16 BSICT
+5V
R13 IK
3
BDFF02(BRDA)(SH4)M2-4
TBI3-7
9
BDFF02(BRDA)(SH4)M2-16
PTCLGO(SH4)M8-10
BSLOI(SH3)MI7-10
ACGBO(SH2)M5-2
7476 MI5 BDFF01
8
DSCIICL(BRD A)(SH2)
FUNCOO
7
7400 M4 FUGCIOO
TBI9-11
LSCBS (SH 3)M4-5
LSL00
7400 M5
TBI3-2
LSGCT(SH3)MI4-13
7404 M7 BSISW
PWR(SH3)
7402 MI8 BTRES
TBI3-6
LO4(SH2)*
BSLOI(SH3)MI7-9
LSLOI(SH3)MI7-5
LCGFOR(SH3)MI4-5
+5V D.C.
R10 56K
74L04 MI2 PWRIN
7404 M24 PWRINI
7404 M23 PWR
BTRES(SH3)MI8-9
DAFFA(SH4)(BRD A)M5-7
DAFF(SH4)(BRD A)M5-2
C3 20 μFD 12V
R
7400 M4 BSGBD
7405 MI6 BOOGPT
2
BOOT
LDFF(SH3)*
PWRINI(SH3)
7410 MI7 LSLOI
LSGBS(SH3)M5-5
PTCLGO(SH4)M8-13
C
DSCIGCL(BRD A)(SH2)
FUNCOI
D
7402 MI8 FUCCIOI
7402 MI8 BSGSW
TBI9-13
LSCBS (SH3) M4-4
BSL00
7400 M5
TBI9-12
BSGCT(SH3)MI7-2
+5V
R9 IK
ENT BOOT
L=ENT BOOT
J
7404 M7 BOIPT
7410 MI7 BSLOI
BDFFOI(SH3)*
PTCLGO(SH4)M8-12
LSGBS (SH3)M5-4
BSGBD(SH3)M4-9
BOARD B
ITEM NO
PART ASSY NO
DESCRIPTION
ASSEMBLY QUANTITIES
INCOTERM CORPORATION
5 PATHMORE ROAD
NATICK, MASSACHUSETTS 01760
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part, or used for manufacture for anyone other than INCOTERM Corporation without such express written consent, and no right is granted to disclose or so use any information contained in said document. This restriction does not limit the right to use information obtained from another source."
DRAWN
CHECKED
ENGINEER
APPROVED
DATE
NEXT USED ON
TITLE
PAPER TAPE INPUT UNIT 002
D 003-01-01 A1
SCALE NONE
SHEET 3 OF 4


REVISION HISTORY
REVISION | DESCRIPTION OF CHANGE | CHK | APPD
DAFF(SHT 4) 1
CLIPT(SHT 2) 2
FATCL 7400 MI
TB7-11
FAICL 7404 M3
PTOSCL 7400 MI
TB7-14
DAFFA (SHT 4) M5-8
TURT4-R (SHT 4)
TURT4I 7405 M6
+5V R5 1K
DLFFCG (SHT 2) MI-4
OSIG1 7405 M6
+5V RIO 470Ω
CR3
R7 1K
+5V RII 25Ω 2W
Q3 2N5188
CR4
R8 1K
Q4 2N5188
CR5
CR6 6V ZENER
R9 1K
C5 35 UF
18
17 CMC CLK (TO READER)
16
DLFF (SHT 2) M2-6
DAFFA (SHT 4) M5-6
Y
NAGCOR CLOCK (TO READER)
Y 74L04 MII 8 X
OSIG2
BOARD "B"
LSLOI(SHT 3)
BSLO3(SHT 3)
BDFF0I *(SHT 3)
PTCLGO 7420 M8
F
TYPIOI(SHT 2) BRD A
LDFF(SHT 3)
7410 M6
RIAD LD
DSIPT(SHT 2) BRD A
H
TB19-7 "BOARD B"
L
6
TB7-12
+5V R1 1MEG
CR1
R4 20K
C1 0.03 UF
C2 0.03 UF
CR2
R3 20K
+5V R2 1MEG
TB7-9
Q1 2N5088
Q2 2N5088
OSFF 7476 MI2
J Q T K Q
DAFFA * (SHT 4)
INHG 7405 M6
R6 1K
+5V
RIDAC (SHT 4) MII-2
DAGLDI (SHT 4) M4-11
DAGLD 7402 M9
DAFF*(SHT 4)
LDFF*(SHT 3) BRD B
F
CLPTI (SHT 2) M4-3
PIN 16 +5V PIN 8 GND
8T148
+5V RI6 1.5K
CPT02N M
CPT02
+5V RI8 1.5K
CPT09N D
Ø9
+5V RI9 1.5K
CPT18N 14
Ø18N
13
MI3
E
BDFF02 (SHT 4) M2-1
BDFF0I (SHT 3)(BRD B) MI5-6
LDFF (SHT 2)(BRD B) MI5-1
7404 M3 OSICL
OSGCL 7402 M9
RSPT(SHT 3) BRD B
19
FUI02 7405 M6
FUNC 02 15
5V R13 1K
FUI03 7405 M6
FUNC 03 X
+5V R14 1K
MASK 7476 MI2
S J CK K Q
DSCIICL (SHT 2)
TP7-3
DASMA 7400 M8
TB7-4
INGSL 7400 M8
B INT. SEL. OUT
INLRS 7404 M3
INLOO 7400 MI
ISGDA
INLOZ 7400 M8
TB7-5
H=>INT
TB7-2
BDFF02
BDFF0I(SHT 3) BRD B
OSGCL (SHT 4)
BDFF0I(SHT 3) BRD B
3
2
J Q CK K C M2 7476
INT. SEL. IN C
7404 M3 INISL
TB7-10
TIOAC 7410 MII
TIOGPT(SHT 2)
DSIPT(SHT 2)
RIOAC 7410 MII
DAGLD(SHT 4)
TYPIOI(SHT 2)
BOOAC 7410 MIO
DAFF(SHT 4)
TP7-7
ACGBO(SHT 2) (BRD B) M5-1
V
7410 MII RTBGAC
TB7-6
7405 M6 ACKPT
DAGLD(SHT 4)
7404 M4 DAGLDI
TYPIOI (SHT 2)
7410 MIO INTFG
DSIPT (SHT 2)
W ACK L=> ACKNOLEDGE
7404 M4 INIFG
7402 M9 INIG
TYPIOI (SHT 2)
H INTX L=> INT
BOARD "A"
PIN 16 +5V PIN 8 GND
8T14B
+5V R20 1.5K
TURT4 21
TURT4R
TURT4I (SHT 4) M6-5
+5V R21 1.5K
ADDXX N
ADDXXR
DSIPT (SHT 2) M4-5
MI4
+5V R22 1.5K
TYPOI K
TYPOIR
TYPIOI (SHT 2) M3-1
A
+5V
C3 20UF 12V
C4 20UF 12V
GND 22
PWRINI(SHT 3) BRD B
T
TB7-1
TB7-13
DAFFA
OSFF (SHT 4)
CLIPT (SHT 2)
S Q CK K C Q M5 7476
PTOSCL (SHT 4)
IHNG (SHT 4)M6-1
LSBSCL(SHT 3)(BRD B)M6-1
LCGCLF(SHT 3)(BRD B)M6-11
BOOAC (SHT 4) MIO-3
FATCL(SHT 4) MI-1
P
DAGLD(SHT 4)M9-11
DAFF
TERM NO | PART ASSY NO | DESCRIPTION | ASSEMBLY QUANTITIES 701 702 703 704 705 706 707
INCOTERM CORPORATION
8 STRATHMORE ROAD NATICK, MASSACHUSETTS 01760
"This document is the property of INCOTERM CORPORATION and is delivered on the express condition that it is not to be disclosed, reproduced in whole or in part or used for manufacture for anyone other than INCOTERM Corporation without its written consent and that no right is granted to disclose or so use any information contained in said document. This right of use does not limit the right to use information obtained from another source"
DRAWN T. SCHILLEREF 6-2-73
CHECKED 6-4-73
SIZE D
DOCUMENT NUMBER 003-01-01
REV AI
SCALE
SHT 4 OF 4
TITLE PAPER TAPE INPUT UNIT 002
401